

**FIFTH FIVE-YEAR REVIEW REPORT FOR
BRIO REFINING SUPERFUND SITE**

HARRIS COUNTY, TEXAS



September 2018



Prepared by

U.S. Environmental Protection Agency

Region 6

1445 Ross Avenue

Dallas, TX 75202-2733

**FIFTH FIVE-YEAR REVIEW REPORT
BRIO REFINING SUPERFUND SITE
EPA ID#: TXD980625453
HARRIS COUNTY, TEXAS**

This attached report documents the U.S. Environmental Protection Agency's performance, determinations, and approval of the Brio Refining Superfund Site (Brio Site or Site) Fifth Five-Year Review under Section 121 (c) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S. Code Section 9621(c).

Summary of the Fifth Five-Year Review Report

The results of the Fifth Five-Year Review indicate that the remedy completed to date is currently protective of human health and the environment in the short term. Overall, the remedial actions performed are functioning as designed, and the Site is being maintained appropriately. No deficiencies were noted that currently impact the short-term protectiveness of the remedy, although items were identified that require further action to ensure the continued long-term protectiveness of the remedy.

Environmental Indicators

Human Exposure Status: Current human exposures at the Site are under control

Contaminated Groundwater Status: Groundwater migration is under control

Site-Wide Ready for Reuse: Yes

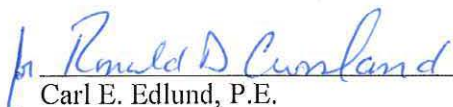
Actions Needed

The following actions must be taken for the remedy to be protective in the long-term:

- Further delineate affected groundwater in the Fifty Foot Sand Zone (FFSZ) and prepare a remediation action plan. Continue quarterly sampling of FFSZ groundwater until EPA approves a return to annual sampling.
- Continue current pumping rate of the Pit J-Numerous Sand Channel Zone groundwater to maintain an upward gradient.

Determination

I have determined that the remedy for the Brio Refinery Superfund Site is currently protective of human health and the environment. This five-year review report specifies the actions that need to be taken to ensure the continued long-term protectiveness of the remedy.



Carl E. Edlund, P.E.

Director, Superfund Division

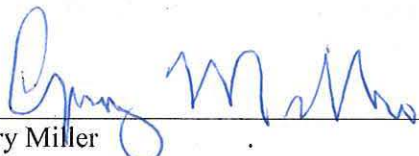
U.S. Environmental Protection Agency Region 6



Date

CONCURRENCES

FIFTH FIVE-YEAR REVIEW REPORT
BRIO REFINERY SUPERFUND SITE
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Gary Miller
Remedial Project Manager

8/30/18

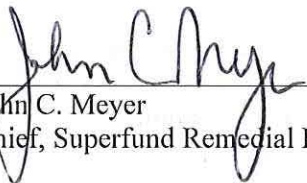
Date



Carlos A. Sanchez
Chief, Arkansas/Texas Section

8/30/18

Date



John C. Meyer
Chief, Superfund Remedial Branch

9/4/18

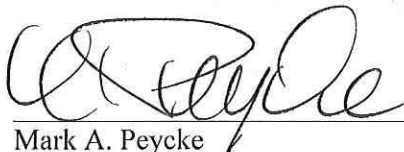
Date



Anne Foster
Attorney, Office of Regional Counsel

9/18/18

Date



Mark A. Peycke
Chief, Superfund Branch, Office of Regional Counsel

09/18/18

Date



Pamela Phillips
Deputy Director, Superfund Division

9/20/18

Date

**ISSUES/RECOMMENDATIONS
FIFTH FIVE-YEAR REVIEW REPORT
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Issues/Recommendations	
Operable Unit (OU) without Issues/Recommendations Identified in the Five-Year Review:	
None	

Issues and Recommendations Identified in the Five-Year Review:

Source Control/ Management of Migration OU	Issue Category: Monitoring			
	Issue: Continued Operation Site constituents were detected at concentrations above their maximum contaminant levels (MCL) in the Fifty Foot Sand Zone (FFSZ) downgradient from the Site.			
	Recommendation: Further delineate affected groundwater in the FFSZ and prepare a remediation action plan. Continue quarterly sampling of FFSZ groundwater until EPA approves to a return to annual sampling. Continue current pumping rate of the Pit J-Numerous Sand Channel Zone groundwater to maintain an upward gradient.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	PRP	EPA	March 31, 2021

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LIST OF ABBREVIATIONS & ACRONYMS

AER	Annual Effectiveness Report
ARAR	Applicable or Relevant and Appropriate Requirement
BSTF	Brio Site Task Force
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
1,2-DCA	1,2-Dichloroethane
DNAPL	Dense Non-Aqueous Phase Liquid
DOP	Dixie Oil Processors Superfund Site
EA	Endangerment Assessment
EPA	United States Environmental Protection Agency
FFSZ	Fifty Foot Sand Zone
FML	Flexible Membrane Liner
FYR	Five-Year Review
ICP	Institutional Control Plan
ICs	Institutional Controls
MCL	Maximum Contaminant Level
MCU	Middle Clay Unit
ug/l	Micrograms Per Liter
mg/l	Milligram Per Liter
MNA	Monitored Natural Attenuation
MOM	Maintenance, Operations, and Monitoring
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NCP	National Contingency Plan
NRDA	Natural Resources Damages Assessment
NSCZ	Numerous Sands Channel Zones
O&M	Operation and Maintenance
OU	Operable Unit
ppb	Parts Per Billion
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objectives
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SOP	Standard Operating Procedure
TBC	To be considered
1,1,2-TCA	1,1,2-Trichloroethane
TCEQ	Texas Commission on Environmental Quality
UU/UE	Unlimited Use and Unrestricted Exposure
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR report pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the Fifth FYR for the Brio Refining Superfund Site (Brio Site and Site), which covers the period January 1, 2013 to December 31, 2017. The triggering action date for this review is five years from the date of signing the last FYR. The last FYR was signed by the EPA on September 18, 2013. The FYR has been conducted due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site work consists of one operable unit (OU). The July 2, 1997 Amended Record of Decision (ROD) addressed all the threats at the site as a single OU, which includes both groundwater contamination and source control.

The Brio Refining Superfund Site FYR was led by Gary Miller of EPA Region 6. Participants included Sherell Heidt - Texas Commission on Environmental Quality (TCEQ), Matthew Foresman - Site Coordinator - Brio Site Task Force (BSTF), John Danna - BSTF Site Manager - BSTF, Lawrence E. Engle - BSTF staff, and Roger Pokluda of GSI Environmental, Inc. - consultant for BSTF. The review began on March 3, 2018.

Site Background

This section describes the physical setting of the Site, a description of the land and resource use, and the environmental setting.

Physical Characteristics

The Brio Site is located almost 20 miles south of Houston, Texas, and occupies approximately 58 acres (ac). The Site is divided by Dixie Farm Road into two areas sometimes referred to as Brio North and Brio South. Vacant land is located on the northwestern boundary of Brio North. Mud Gully, a flood control ditch and local tributary of Clear Creek, runs along the southwestern boundary of Brio North and Brio South. Vacant land and the Dixie Oil Processors Site (DOP) are across Mud Gully along Brio North, and DOP is across Mud Gully along Brio South. To the northeast, Brio is bounded by Beamer Road north of Dixie Farm Road and by Tract 75, owned by the BSTF, to the south of Dixie Farm Road. To the southeast, the site is adjacent to vacant land. Figure 1 in Appendix B shows the general location of the Brio Site. Figure 2 in Appendix B shows the Site layout. Figure 3 in Appendix B shows the land use surrounding the Brio Site.

The Brio Site is located within the Pleistocene Deltaic Plain of the Brazos River, known as the Alameda Delta. The Site is underlain with Pleistocene and Pliocene deposits to a depth of approximately 2,400 feet (ft.).

Generalized stratigraphic columns and a geologic cross-section are presented in Figures 1 through 3 of Appendix H. The Numerous Sand Channels Zone (NSCZ) and the Fifty-Foot Sand Zone (FFSZ) are the two water-bearing units investigated at the Brio Site. The upper water bearing zone, the NSCZ, lies below the Upper Clay Unit and is comprised of interbedded sands and silty clays. The NSCZ is generally encountered from 14 to 32 ft. below ground

surface (bgs) and has a low well yield. The thickness of the NSCZ varies from less than 10 to over 20 ft. The groundwater in the NSCZ typically flows toward and discharges to Mud Gully to the west.

The FFSZ is separated from the NSCZ by the Middle Clay Unit (MCU), a confining layer ranging in thickness from 8 to 20 ft. Ranging in thickness from 35 to 45 ft., the FFSZ is generally encountered between 52 and 61 ft. bgs and has a reasonably high well yield. Groundwater in the FFSZ flows in an eastwardly direction at rates on the order of 10 to 50 ft. per year.

Land and Resource Use

The Site was formerly used for reclamation of petrochemicals from various source materials, most of which were residues, tank bottoms, and tars of other processes performed at off-site locations, with Brio North being historically used for storage purposes and Brio South being primarily used for processing activities. Spanning the period of 1957 to 1982, processing operations included regeneration of copper catalysts; recovery of ethylbenzene from styrene tars, chemicals from vinyl chloride bottoms, phenol heavy ends, chlorinated hydrocarbons, cresylic acid and ethylene glycol; and the production of ethylbenzene, toluene, aromatic solvents, styrene pitch, cresylic acid, sodium sulfide, sodium cresyllite, fuel oil, cumene, diesel fuel, residual oil, naphtha, kerosene and jet fuel. Most of the feedstock materials for processing at Brio were stored in on-site pits, many of which were located on Brio North. Disposal areas were located on both the Brio North and Brio South Sites. All of the pits were closed during Site operations, which ceased in December 1982. The EPA placed the Site on the National Priorities List (NPL) on March 31, 1989.

Current land use of the surrounding area includes residential development, a college, a hospital, and commercial development to the northeast. The area to the east includes residential development, a convenience store that sells fuel, and an active oil field. A buffer of undeveloped properties exists to the north, west and south of the Site. The property to the south has been used for the establishment of a wetland habitat and preservation of forest habitat as part of a Natural Resource Restoration Project implemented by the BSTF in conjunction with several state and federal agencies. Residential development is approximately 0.1 miles to the west and east of the Site.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Brio Refining Superfund Site		
EPA ID: TXD980625453		
Region: 6	State: TX	City/County: Harris
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	Has the Site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Gary Miller		
Author affiliation: EPA Region 6		
Review period: 1/1/2013 - 12/31/2017		
Date of Site inspection: 3/28/2018		
Type of review: Statutory		
Review number: 5		
Triggering action date: 9/18/2013		
Due date (five years after triggering action date): 9/18/2018		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The three primary historically affected media at the Site are groundwater, surface soils, and subsurface soils, although Site work has addressed sediments and air emissions as well. The extent of affected soils and groundwater has been defined through previous investigations and studies. The principle contaminants of concern at the Site are organic compounds and chlorinated solvent compounds. Some of the notable contaminants include the following:

1,1,2-Trichloroethane (1,1,2-TCA)
1,2-Dichloroethene
1,1-Dichloroethane
bis-(2-chloroethyl) ether

1,2-Dichloroethane (1,2-DCA)
1,1-Dichloroethene
vinyl chloride
phenanthrene

An Endangerment Assessment (EA) was performed shortly after a Remedial Investigation/Feasibility Study (RI/FS) was completed. The EA estimated the potential for adverse effects on human health and the environment from exposure to contaminants at the Site. The actual contaminant concentrations found on the Site were compared to the exposure from a concentration known to have an adverse impact. From the EA, it was determined that the Site potentially posed four major risks to human health and the environment. The identified pathways were:

- Direct (dermal) contact and ingestion of contaminated surface soils and sediments on the Site.
- Inhalation of contaminated dust and volatile organic compound (VOC) emissions from the Site.
- Ingestion of contaminated groundwater from the FFSZ beneath the Site.
- Exposure of aquatic biota to NSCZ discharges of contaminated groundwater to Mud Gully.

Response Actions

Initial Response

In June 1989, an Administrative Order on Consent (AOC) was signed with a group of companies, referred to as the Brio Site Task Force or BSTF, to begin dismantlement of the process equipment on the Site. The facility dismantlement was completed in December 1989. Material present in the process equipment and tanks was consolidated into remaining tanks. Approximately 30 tanks were left on the Site that could potentially be used in the implementation of a bioremediation remedy. The process equipment and tanks were decontaminated and sent to an off-site smelter for reclamation. Please see Appendix J Chronology of Site Events and Figure 2 in Appendix B.

Remedial Actions

The containment remedy selected in the 1997 ROD Amendment replaces on-site incineration as selected in the 1988 Record of Decision (ROD). The containment remedy reduces the risks associated with exposure to contaminated materials and inhibits the migration of contaminated groundwater from the Site. The major components of the amended remedy include:

- Installing a sub-grade vertical barrier wall enclosing the Site;
- Capping the site with a cover system consisting of compacted clay, liner, and gas collection system;
- Constructing a groundwater hydraulic gradient control system to manage the migration of contaminants within the containment system; and

- Improvements to Mud Gully to ensure flow capabilities within the drainage system.

Remedial Action Objectives

The 1997 amended ROD includes the following Remedial Action Objectives (RAOs):

- Protection of the health and safety of the community, workers, and the environment during implementation of the remedy;
- Minimization, to the extent practicable, of disruption and inconvenience to the community during implementation of the remedy;
- Long-term, effective control of migration of leachable organic liquids from the source area;
- Long-term, effective control of off-site migration of free-phase liquids or Site constituents moving through the groundwater, surface water, soil, or air pathways;
- Long-term, effective reduction of potential future risk to the community and the environment resulting from off-site exposure to Site constituents by maintaining or achieving:
 - Target levels of public exposure to air emissions,
 - Target levels of affected soil (dermal contact and ingestion),
 - Control of off-site transport of affected soils to acceptable levels,
 - Protection of existing aquatic life in Mud Gully, and
 - Target levels of organic constituents in the FFSZ within a reasonable time
- Minimization of potential negative impact of natural disasters such as flooding, hurricanes, etc.; and
- Long-term, effective Site control and aesthetics.

Remedy Selection

The 1997 Amended ROD selected containment as the preferred remedial alternative. The elements of the containment remedy included:

Vertical Barrier Wall - A sub-grade barrier wall constructed to limit the potential for off-site migration of contaminated groundwater in the NSCZ.

Site Cover - A composite cap extending to the limits of the barrier wall and including a gas collection layer, a flexible membrane liner (FML), compacted clay, and top soil to promote vegetative growth.

Groundwater Flow Control - A groundwater pumping system within the barrier wall to limit the migration of Site contaminants with recovered groundwater treated and discharged to Mud Gully.

Long-Term Groundwater Monitoring - Groundwater monitoring in the FFSZ and NSCZ.

Mud Gully - Improvements to the gully.

Other Construction-related Components -:

- Air monitoring during construction;
- Off-site soil contamination encountered during Remedial Investigation (RI) and Remedial Action (RA) removed to background levels;
- Inert debris and rubble from past operations consolidated and disposed;
- Wastewater treatment system installed;
- Existing storage tanks and drums emptied, decontaminated and disposed of; and
- Remaining processing equipment dismantled.

Permanent Site control and implementation of deed notices and restrictions

Compliance standards in the Amended ROD are presented in Table 1.

Table 1
Compliance/Performance Standards

Fence Line Ambient Air Quality Standards (24-hour average - ppb)	
Benzene	50
1,2-Dichloroethane	200
Methylene Chloride	1100
1,1,2-Trichloroethane	656
Vinyl Chloride	690
Mud Gully Surface Water Performance Standards/Goals (ug/l)	
1,1,2-Trichloroethane	4,180/41.8
1,2-Dichloroethane	20,000/1,794
1,1-Dichloroethene	8,740/87.4
Vinyl Chloride	9,450/94.5
Clear Creek Surface Water Performance Standards/Goals (ug/l)	
1,1,2-Trichloroethane	3,020/302
1,2-Dichloroethane	739/73.9
1,1-Dichloroethene	58.4/5.84
Vinyl Chloride	4,150/415
NSCZ Groundwater Performance Standards (mg/l)	
1,1,2-Trichloroethane	4.18
1,2-Dichloroethane	20.00
1,1-Dichloroethene	8.74
Vinyl Chloride	9.45

Table 1
Compliance/Performance Standards Continued

FFSZ Groundwater Maximum Contaminant Levels (ug/l)	
Volatiles	
Benzene	5
Carbon Tetrachloride	5
Chlorobenzene	100
1, 2-Dichlorobenzene (o-dichlorobenzene)	600
1, 4-Dichlorobenzene (p-dichlorobenzene)	75
1, 2-Dichloroethane	5
1, 1-Dichloroethene	7
cis-1, 2-Dichloroethene	70
trans-1, 2-Dichloroethene	100
Methylene Chloride (Dichloromethane)	5
1, 2-Dichloropropane	5
Ethylbenzene	700
Styrene	100
Tetrachloroethene	5
Toluene	1000
1, 2, 4-Trichlorobenzene	70
1, 1, 1-Trichloroethane	200
1, 1, 2-Trichloroethane	5
Trichloroethene	5
Vinyl Chloride	2
Xylenes (Total)	10000
Total trihalomethanes (TTHMs)	100
Semivolatiles	
Benzo(a)pyrene (PAHs)	0.2
bis(2-Ethylhexyl)phthalate ²	6
Hexachlorobenzene	1
Hexachlorocyclopentadiene	50
Pentachlorophenol	1

Status of Implementation

Construction of the Remedial Action (RA) pursuant to the Amended ROD began in July 2000 and was implemented in phases. The construction was managed by the BSTF pursuant to the Site Consent Decree and was conducted by various specialty contractors as required for each remedy component.

Soil Bentonite Barrier Wall

Approximately 5,900 lineal ft. of slurry wall was constructed around the perimeter of the Site from September to December 2000. The slurry wall was constructed by excavating a 30-inch (in.) wide trench to a depth that seals the wall into the low-permeable MCU. The depth of the slurry wall ranged from approximately 35 to 50 ft. below ground surface. The stability of the excavation was maintained using a drilling mud fluid (slurry) that was prepared on-site. Once the excavation achieved the proper depth, a backfill material (consisting of thoroughly mixed native soils and fresh slurry) was placed in the excavation. Once installed, the backfill material became the barrier wall and was tested to confirm that the constructed barrier wall achieved the required impermeability.

The EPA provided oversight of the construction. On December 16, 2004, EPA approved the Remedial Action Completion Report.

Sheet Pile Barrier Wall

The sheet pile barrier wall was installed from July 2001 to December 2001. The wall is approximately 1,781 ft. long and varies in depth from 35 to 50 ft. bgs. The wall was installed to designed depths into the low permeable MCU. The sheet pile wall is composed of two sections:

- The main alignment is approximately 1,188 linear ft. and was installed on the Brio Site.
- The cofferdam alignment is approximately 593 linear ft. and was installed within the Mud Gully easement to contain an off-site groundwater plume.

Cover System

The construction of the cover system was divided into two components: Brio North and Brio South. The two areas are divided by Dixie Farm Road and separate borrow pit areas were developed in order to minimize truck traffic over the road.

The Brio North and Brio South cover system components are as follows:

- Bedding Layer (varies in thickness),
- Gas Collection Layer,
- Flexible Membrane Liner,
- Compacted Clay Layer (eighteen in.), and
- Vegetative cover

The Brio South cover was initiated first due to its smaller size. The Brio South cover system was constructed from May 2001 to February 2002. An additional compacted clay layer was extended over a segment of the Dixie Oil Processors (DOP) South Site to provide controlled surface water runoff.

The Brio South cover system comprises approximately 11.7 ac. and was constructed to the limits of the soil-bentonite barrier wall on the east and south sides, to Dixie Farm Road right-of-way on the north side, and to DOP

South on the west side. The cover system was designed with one compartment with a gas collection system and was shaped to provide surface runoff.

The Brio North cover system was constructed from December 2001 to October 2003. The Brio North cover system comprises approximately 50.5 ac. and was constructed to the limits of the soil bentonite barrier wall on the east and north sides, to the Dixie Farm Road right-of-way on the south side, and to the sheet pile barrier wall on the west side. As shown on Figure 2 in Appendix B, the Brio North cover system was designed with three compartments to provide for control of surface runoff and to facilitate gas collection. Prior to placement of the FML, one gas collection trench was excavated in the bedding layer of each compartment.

Mud Gully Improvements

Under the jurisdiction of the Harris County Flood Control District, construction of Mud Gully improvements was performed from June 2002 to June 2003. The affected area of Mud Gully comprises a length of approximately 1,160 ft. between Brio North and DOP North. The construction activity consisted of:

- Clearing of trees and brushes along and within the improvement area,
- Reshaping channel surface to design elevation,
- Installing new drainage pipes, abandoning and retrofitting existing drainage pipes,
- Installing articulated concrete block,
- Restoring the DOP North property to its pre-construction condition, and
- Placing top soil layer and vegetative cover.

EPA provided oversight of the construction. An interim completion report was issued by the BSTF that provided the construction quality assurance documentation. The interim report was incorporated by reference into the Remedial Action Completion Report dated December 16, 2004.

Groundwater Control Systems

Construction on the groundwater control system began in February 2001 and was completed in February 2004. The Groundwater Control System, also referred to as the Groundwater/DNAPL Recovery System, utilizes a pumping system to maintain an inward hydraulic gradient within the Brio Site barrier wall using wells within the NSCZ. Components of the recovery system include:

- A system of seventeen (17) groundwater recovery wells on the Brio North and Brio South Sites,
- A system of thirteen (13) DNAPL recovery wells on Brio North,
- Hub facilities to provide air pressure for the recovery well pumps and to separate groundwater, DNAPL, and light non-aqueous phase liquid (LNAPL),
- Pipeline system for the recovery and transfer of collected water to the treatment facility, and
- Vegetative cover.

Institutional Controls

Dated February 2, 2006, the Institutional Control (IC) Plan for the Brio Refining Superfund Site provides for institutional controls to reduce the risk to public health and the environment from potential hazards posed by the Site. The IC Plan was incorporated into the Maintenance, Operations, and Monitoring (MOM) Plan as Revision 2 in April 2006. As called for by the IC Plan, deed restrictions and notices have been filed at the Harris County Clerk's Office for the Site, and Site personnel inspect the perimeter fencing, gates, and locks on a weekly basis, at a minimum.

Table 2 presents a summary of the deed restrictions, copies of which are included in Appendix G.

Table 2
Summary of Implemented Deed Restriction and Notice ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s) (Harris Co. Tax ID)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater Soil Sediments	Yes	Yes	<ul style="list-style-type: none"> • 0410110000200 • 1150780010001 • 1149650010003 	Restricts certain activities within the Brio Superfund Site boundaries. Provides notice of CERCLA actions and site contaminants	Deed Restriction Harris Co. Doc#: Y730710 8/24/2005
			<ul style="list-style-type: none"> • 0410110000309 • 0402230000200 • 0402230000199 • 0410110000310 • 0.754 ac out of 0410110000180 		Deed Restriction Harris Co. Doc#: Y730711 8/19/2005
			<ul style="list-style-type: none"> • 0402230000070 • 0410110000261 • 0410110000262 	Provides notice of CERCLA actions and contaminants within the Brio Superfund Site.	Deed Notice Harris Co. Doc#: Y730708 8/23/2005

Systems Operations/Operation & Maintenance

Because hazardous materials remain on-site, access to the Brio Site and the groundwater monitoring wells is restricted.

A Maintenance and Monitoring Plan (MOM) was submitted to the EPA in February 2004 and last amended in January 2011.

The MOM activities include:

- Inspect security lighting, gates, fences, roads, drainage, signs, and worker safety equipment/systems.
- Inspect remedial components: cover system, barrier wall alignment, groundwater/DNAPL recovery system, gas collection system, water treatment system, monitoring wells, groundwater and DNAPL recovery wells, and the Mud Gully slope condition.
- Operation, maintenance, and monitoring of the gradient control/groundwater and DNAPL recovery system.
- Operation and maintenance of the water treatment plant.
- Groundwater, surface water and air sampling and monitoring.

- Effluent discharge sampling and monitoring.
- Maintenance of the cover system.
- Reporting to EPA.

BSTF personnel are at the Site daily performing MOM activities. Daily and weekly inspections are conducted to verify the condition of the components of the groundwater treatment plant. In addition to regularly scheduled maintenance for the groundwater treatment plant, monthly inspections are performed, and inspection reports are prepared to document conditions at the Site as listed above. Groundwater treatment plant operation is monitored by computer and the systems are capable of calling BSTF personnel on their cell phones and then at their homes during non-working hours if a problem occurs.

BSTF personnel conduct batch monitoring of the effluent discharge. After the groundwater is treated at the plant, it is stored on-site and sampled and tested for site discharge standards. If the samples pass site discharge standards, the treated water is discharged to Mud Gully. Discharge standards are presented in Appendix C.

The MOM costs for the five-year period covered by this report (2013 through 2017) were \$5,691,179.22.

III. PROGRESS SINCE THE LAST REVIEW

Table 3 provides the protectiveness determination and statement from the 2013 Fourth FYR and Table 4 provides the issues and recommendations from the 2013 Fourth FYR and the current status of those recommendations.

Table 3
Protectiveness /Statements from the 2013 Fourth Five-Year Review

OU	Protectiveness Determination	Protectiveness Statement
	Short-term Protective	<p>The remedy for the Brio Refining Superfund Site is operating as designed and is protective of human health and the environment in the short term, and is expected to be protective of human health and the environment upon completion if the recommendations and follow-up actions identified in this five-year review are addressed. As part of the Fourth Five-Year Review, the EPA and TCEQ conducted an inspection on December 13, 2012, and determined that the implemented RA is protective of human health and the environment in the short-term. The remedial action has removed exposure pathways that could have resulted in unacceptable risks by preventing exposure of human receptor populations to contaminated air, soils, and groundwater.</p> <p>Long-term protectiveness of the remedial action will be achieved by continued monitoring of air, groundwater, and surface water to assess the effectiveness of the Site controls. The affected FFSZ groundwater is currently an issue under investigation and will be evaluated during the next five-year review period.¹</p>

The protectiveness statement of the Summary Form of the 2013 FYR contains more language than the protectiveness statement in Section X of the 2013 FYR. This table quotes the Summary Form's language.

Status of Recommendations

The previous FYR report stated that the remedy continues to be protective of human health and the environment. Four issues, however, were identified that could potentially require further actions. A summary of the issues and the reevaluation and actions taken at the Brio Site since the previous FYR are given in Table 4:

Table 4
Status of Recommendations from the 2013 Fourth Five-Year Review

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
	Affected FFSZ Groundwater: Well BMW-3B 1,2-dichloroethane and vinyl chloride above MCLs. Well BMW-18B drinking water volatile detections below MCLs.	(1) Conduct an off-site FFSZ groundwater delineation investigation	Completed	An off-site FFSZ groundwater delineation investigation was conducted to the east and south of the Site. Based on the results of the investigation, the BSTF submitted to EPA a proposed workplan to further delineate the extent of affected FFSZ groundwater.	March 2016
		(2) Assess monitored natural attenuation (MNA) and other options as potential response measures for Site constituents in the FFSZ	Completed	MNA was assessed during the off-Site FFSZ groundwater delineation investigation. The FFSZ groundwater may be favorable for an MNA remedy.	March 2016
		(3) Investigate existence of FFSZ wells located east of the Brio Site	Completed	A study of water wells near the Brio Site indicated no public water supply wells are screened in the FFSZ. Private FFSZ wells near the Brio Site are either upgradient or cross gradient in the FFSZ and/or at least 0.5 miles from the Brio Site.	August 2015
		(4) Continue with increased pumping rates at the Pit J -NSCZ groundwater recovery system to maintain upward gradient per MOM specified goals	Ongoing	Increased NSCZ groundwater pumping has continued, and an upward gradient from the FFSZ to the NSCZ has been maintained.	N/A
		(5) Sample wells BMW-3B and BMW-18B and analyze for drinking water volatiles quarterly to confirm results until EPA approves a return to annual sampling	Ongoing	Wells BMW-3B and BMW-18B have been sampled quarterly.	N/A
	Cover soil repair	Import clay soil and repair cover to design specifications.	Completed	Routine maintenance of the Site is completed as needed per the Site's MOM Plan	As Needed
	No requirement for south plume operational performance monitoring ¹	Prepare a work plan specifying the objectives and scope of work.	Completed	A work plan was prepared and approved by EPA.	February 2015
	South plume monitoring well abandonment	Prepare a work plan for plugging and abandonment of obsolete south plume monitoring wells.	Completed	A work plan was prepared and approved by EPA. The obsolete south plume monitoring wells were properly plugged and abandoned.	December 2014

¹ Uses combined language from both the Summary Form and Section IX of the 2013 Fourth FYR.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was made available by placing a classified advertisement in the South Belt Ellington Leader newspaper on April 26, 2018, stating that the EPA was conducting a FYR and that the results of the review would be available in the Brio Site Information Repository and online at the EPA website. The notice included the Brio Site location and name and contact information of the EPA remedial project manager. A copy of the public notice and affidavit can be found in Appendix F.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. Interview records are presented in Appendix F. The results of these interviews are summarized below.

Sherell Heidt - Project Manager for TCEQ

Ms. Heidt wrote that the Site is well maintained. She said in 2015, the TCEQ certified the implementation of the Natural Resources Damages Wetlands Project was successfully achieved and maintained. There have been no complaints to TCEQ, violations, or other incidents requiring a response by TCEQ. The TCEQ is well informed about the Site's activities and progress. The TCEQ supports the Brio Site Task Force's current and future efforts of gathering data to delineate the affected FFSZ groundwater and confirm whether the plume is stable and attenuating. She said the BSTF is in the final stages of finalizing a sampling plan to investigate the southeast area of the plume. In the near future, the TCEQ looks forward to receiving the Action Plan to address the plume. BSTF sent a Phase III FFSZ Groundwater Investigation Workplan to EPA and TCEQ after the interview occurred.

Ms. Heidt said the BSTF has increased the monitoring frequency in the FFSZ wells, increased the pumping in the NSCZ, conducted an ongoing groundwater investigation of the South Plume located in the FFSZ, and is continuously evaluating whether there is evidence of natural degradation.

Marie Flickinger - Owner of South Belt Ellington Leader Newspaper, Chairperson of the Brio Site Community Advisory Group

Ms. Flickinger wrote that after 25 years, the remedy has been protective of the community. The community has been informed of activities at the site. Mitigation of contamination 50-feet below ground level is being monitored and addressed. All concerns over the past 25 years have been properly addressed. She said that she wishes the community had a more realistic and knowledgeable vision of Brio.

Data Review

Performance and compliance monitoring data collected as part of the operations and maintenance were reviewed as part of this FYR. The data consist of NSCZ groundwater quality data, Mud Gully and Clear Creek surface water quality data, FFSZ groundwater quality monitoring data, fence line air quality data, NSCZ and FFSZ groundwater level measurements, groundwater recovery volumes, and DNAPL recovery volumes. Data are collected on an ongoing basis, presented and discussed with EPA in quarterly meetings, and reported.

Gradient Monitoring

Following the detection of MCL exceedances in Well BMW-3B which is screened in the FFSZ, BSTF increased the recovery rate of NSCZ groundwater at Pit J to create an upward gradient from the FFSZ to the NSCZ to eliminate potential downward migration of affected groundwater. The BSTF has maintained the upward gradient to date. Gradient monitoring was conducted in the NSCZ. BSTF assessed the effectiveness of the groundwater recovery system in maintaining an inward lateral hydraulic gradient in the NSCZ from the perimeter of the Site toward the center of the Site and in maintaining an upward vertical hydraulic gradient from the FFSZ aquifer to the NSCZ layer. Static water level data are collected weekly.

Data from the monitoring reports show that an inward lateral hydraulic gradient has been maintained across the NSCZ.

Data from the monitoring reports show an upward vertical hydraulic gradient (FFSZ to NSCZ) has been achieved.

Groundwater Quality Monitoring

During the period covered by this FYR, the BSTF conducted FFSZ groundwater quality monitoring at and near the Brio Site. The wells that were sampled in the monitoring program are listed in Table 5 and shown on Figure 2 in Appendix B.

Table 5	
FFSZ Compliance/Performance Monitoring Wells	
BMW-1B	BMW-2B
BMW-3B	BMW-18B
CMW-1BD	CMW-2BS
DMW-52B*	DMW-47B*

*These wells are on the neighboring DOP Superfund Site and are sampled as part of the Brio Site annual FFSZ groundwater sampling event.

Following the detection of affected groundwater (i.e., exceeding MCL criteria) in Well BMW-3B, the BSTF increased the frequency of sampling certain FFSZ wells from annual to quarterly, installed additional monitoring wells (CMW-1DB screened in the lower half of the FFSZ and CMW-2BS screened in the upper half of the FFSZ), and collected groundwater samples from temporary borings downgradient from (i.e., southeast of) Well BMW-3B. In addition, data were collected to evaluate MNA processes within the FFSZ.

Results are summarized as follows:

- Well BMW-1B - Non-detect (below MCLs) during the FYR period.
- Well BMW-2B - Non-detect (below MCLs) during the FYR period.
- Well DMW-52B - Non-detect (below MCLs) during the FYR period.
- Well DMW-47B - Non-detect (below MCLs) during the FYR period.
- Well BMW-18B - 1,2-Dichloroethane and vinyl chloride were detected less than MCLs during the FYR period (Figure 4, Appendix B).
- Well BMW-3B - 1,2-Dichloroethane was above the MCL (23 ug/L sampled; 5 ug/L MCL) at the beginning of the FYR period, showed decreasing results, and has dropped below (0.87 ug/L sampled) the MCL since

October 2015. Vinyl chloride was above the MCL (11 ug/L sampled; 2 ug/L MCL) at the beginning of the FYR period, showed decreasing results, and has dropped below (1.5 ug/L) the MCL since April 2017 (Figure 4, Appendix B).

- Well CMW-1BD - This well was added due to the MCL exceedances in Well BMW-3B and was sampled on a quarterly frequency. Sampling results have shown 1,2-Dichloroethane and vinyl chloride above the respective MCLs (Appendix B).
- Well CMW-2BS* - This well was added due to the MCL exceedances in Well BMW-3B and was sampled on a quarterly frequency. Sampling results have shown 1,2-Dichloroethane and vinyl chloride above the respective MCLs (Appendix B).

The BTSF's work on the FFSZ during the last two FYR periods show that groundwater is moving very slowly to the south and east of the Well BMW-3B toward undeveloped land. The presence of degradation products and the geochemical conditions within the FFSZ are conducive for the reductive dechlorination of chlorinated solvents. Compound Specific Isotope Analysis provides an additional line of direct evidence, indicating natural biodegradation of COCs. Data from the investigations suggest that MNA processes may be an effective remedy to manage the limited and generally low-level COC concentrations in the FFSZ groundwater within the affected areas, although further investigation is needed.

In July 2018, the BSTF submitted to EPA a proposed workplan to further delineate the extent of affected FFSZ groundwater. The results of all of the BTSF's FFSZ investigations will be used to prepare a remedial action plan to address the affected FFSZ groundwater.

Groundwater and DNAPL Recovery

The groundwater and DNAPL pump and treatment system continues to operate. This system has been in operation since February 2004. Since operations began in 2004, approximately 124,398 gallons of DNAPL have been recovered through the end of the FYR period. Approximately 333,060,168 gallons of groundwater have been recovered from the NSCZ from 2004 through the end of the FYR period.

Recovered groundwater is treated onsite and discharged to Mud Gully after third-party laboratory tests confirm that the treated effluent passes EPA discharge standards. Recovered DNAPL is temporarily stored in an onsite tank until it is sent offsite to be incinerated.

Treated Groundwater Analysis

Analysis of the treated groundwater occurs on a batch basis. The laboratory results are compared to the discharge standards set forth in the 1998 Statement of Work (SOW) and reported annually. If the results showed that the pumped groundwater did not pass discharge criteria, it would be re-treated and re-tested. Discharged groundwater did not exceed discharge criteria during this FYR period.

Site Inspection

An inspection of the Site was conducted on March 28, 2018. In attendance were EPA RPMs Gary Miller and David Abshire, Sherell Heidt of the TCEQ, Brio Site Coordinator Matthew Foresman, Brio Site Manager John Danna, BSTF staff members Lawrence Engle, and BSTF consultant Roger Pokluda of GSI Environmental. The purpose of the inspection was to assess the protectiveness of the remedy.

A site inspection checklist and photographs taken during the inspection are provided in Appendix D. Site inspection tasks included a visual inspection of Site features including the water treatment facility, the cap, compliance wells, fences and gates, and the treatment plant monitoring equipment and protocol. Site logs, documents, and records were reviewed. The Site inspection indicated that the remedy was effective and operating

as intended. The one item noted during the inspection was that the cover system requires maintenance to repair minor erosion in a few locations. This routine maintenance will be completed as needed per the Site's MOM Plan.

V. TECHNICAL ASSESSMENT

QUESTION A:

Is the remedy functioning as intended by the decision documents?

Question A Response:

Yes. The remedy is generally functioning as intended by the decision documents.

The review of documents, sampling results, ARARs, risk assumptions, and the results of the Site inspection indicate that the remedy is functioning as intended by the amended ROD. Following some adjustment in extraction rates, an upward gradient has been achieved and maintained across the NCSZ. All measures appear to be functioning as designed to control NSCZ groundwater gradients, treated groundwater discharges, and air emissions.

Concentrations continue to exceed MCLs as some monitoring wells, however evidence of degradation is present. The work during the last two FYR periods show that groundwater is moving very slowly to the south and east of the Well BMW-3B toward undeveloped land off-site. The presence of degradation products and the geochemical conditions within the FFSZ are conducive for the reductive dechlorination of chlorinated solvents. Data from the investigations suggest that MNA processes may be an effective remedy to manage the limited and generally low-level COC concentrations in the FFSZ groundwater within the affected areas, although further investigation is needed.

O&M is occurring as required in the O&M plans. Regularly scheduled maintenance for the groundwater treatment plant and regular site inspections are performed. These inspections include the following: gates, fences, access roads, wells, the cap, the gas venting system, the slurry wall cap, and drainage facilities. During the FYR site inspection, a visual inspection of site features including the water treatment facility, the cap, compliance wells, fences and gates, and the treatment plant monitoring equipment and protocol found that the remedy is in place and effective. Minor erosion of the cover system should be repaired as part of the ongoing maintenance activities at the Site.

Institutional controls are in place and are effective at preventing unsafe exposure to contaminants on site.

QUESTION B:

Are the exposure assumptions, toxicity data, cleanup levels, and Remedial Action Objectives (RAOs) used at the time of the remedy selection still valid?

Question B Response:

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection are still valid.

The five-year review process includes identification and evaluation of changes in the regulations that form the basis for the ROD-specified Applicable or Relevant and Appropriate Requirements (ARARs) to determine whether such changes may affect the protectiveness of the selected remedy. Appendix E identifies the ARARs for the Brio Site that were identified in the ROD dated March 31, 1988, and the Amended ROD dated July 2, 1997. TCEQ and Federal regulations have not been revised in a manner that would call into question the protectiveness of the selected remedy. No new regulations have been promulgated by the State of Texas or the Federal government that would call into question the protectiveness of the selected remedy.

The cleanup levels established in the amended ROD (Table 1) remain protective and there have not been changes

to MCL for contaminants of concern.

There has not been a change in exposure pathways that may call into question the protectiveness of the remedy.

There have been no changes in toxicity characteristics or other contaminant characteristics related to the Brio Site. Additionally, there has been no change to the standardized risk assessment methodology that would affect the protectiveness of the selected remedy.

QUESTION C:

Has any other information come to light that could call into question the protectiveness of the remedy?

Question C Response:

No. There is no other information that has come to light that could call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations	
Operable Unit (OU) without Issues/Recommendations Identified in the Five-Year Review:	
None	

Issues and Recommendations Identified in the Five-Year Review:

Source Control/ Management of Migration OU	Issue Category: Monitoring			
	Issue: Continued Operation Site constituents were detected at concentrations above their maximum contaminant levels (MCL) in the Fifty Foot Sand Zone (FFSZ) downgradient from the Site.			
	Recommendation: Further delineate affected groundwater in the FFSZ and prepare a remediation action plan. Continue quarterly sampling of FFSZ groundwater until EPA approves to a return to annual sampling. Continue quarterly current pumping rate of the Pit J-Numerous Sand Channel Zone groundwater to maintain an upward gradient.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	PRP	EPA	March 31, 2021

VII. PROTECTIVENESS STATEMENT

Sitewide Protectiveness Statement

Protectiveness Determination:

Short-term Protective

Protectiveness Statement:

The Site's remedy is currently protective of human health and the environment in the short term. There is no evidence that there is current exposure to Site contaminants, and the remedy is being implemented as planned to reduce contamination mass and control migration. To remain protective in the long term, pump and treat operations in the NSCZ water bearing zone should continue and the MCL exceedances in the FFSZ should be addressed as set forth in Section VI.

VIII. NEXT REVIEW

The next FYR report for the Brio Refining Superfund Site is required five years from the completion date of this review. The completion date is the date of the signature shown on the summary of findings page attached to the cover sheet.

APPENDIX A

REFERENCE LIST

FIFTH FIVE-YEAR REVIEW REFERENCES

Brio Refining Superfund Site Record of Decision, March 31, 1988

Brio Refining Superfund Site Amended Record of Decision, July 2, 1997

Brio Refining Superfund Site Statement of Work, March 6, 1998

Spill/Volatile Emissions Release Contingency Plan and Emergency Notification Plan (SVERCP/ENP) for the Brio Superfund Site, July 1999

Worker Health and Safety Plan for the Brio Superfund Site, March 2004

Institutional Control Plan for the Brio Refining Superfund Site, April 2006

Brio Refining Superfund Site Maintenance, Operations, and Monitoring Plan, February 2004 (Rev. 4, January 31, 2011)

Phase I Fifty-Foot Sand Zone (FFSZ) Groundwater Investigation [Report], Brio Refining Superfund Site, Harris County, Texas, January 14, 2011

Fourth Five Year Review Report for Brio Refining Superfund Site, July 2013

Brio Refining Superfund Site Ninth Annual Effectiveness Report, June 11, 2014

Brio Refining Superfund Site Tenth Annual Effectiveness Report, January 12, 2015

Brio Refining Superfund Site Eleventh Annual Effectiveness Report, November 10, 2015

Phase II Fifty-Foot Sand Zone (FFSZ) Groundwater Investigation [Report], Brio Refining Superfund Site, Harris County, Texas, March 11, 2016

Brio Refining Superfund Site Twelfth Annual Effectiveness Report, September 6, 2016

Brio Refining Site Superfund Thirteenth Annual Effectiveness Report, February 2018

Brio Refining Superfund Site Manifest Log

Brio Refining Superfund Site OSHA 300 Log

APPENDIX B

BRIO REFINING SUPERFUND SITE LOCATION, WELLS, SITE STRUCTURES, AND ANALYTICAL RESULTS

Figure 1
Site Location

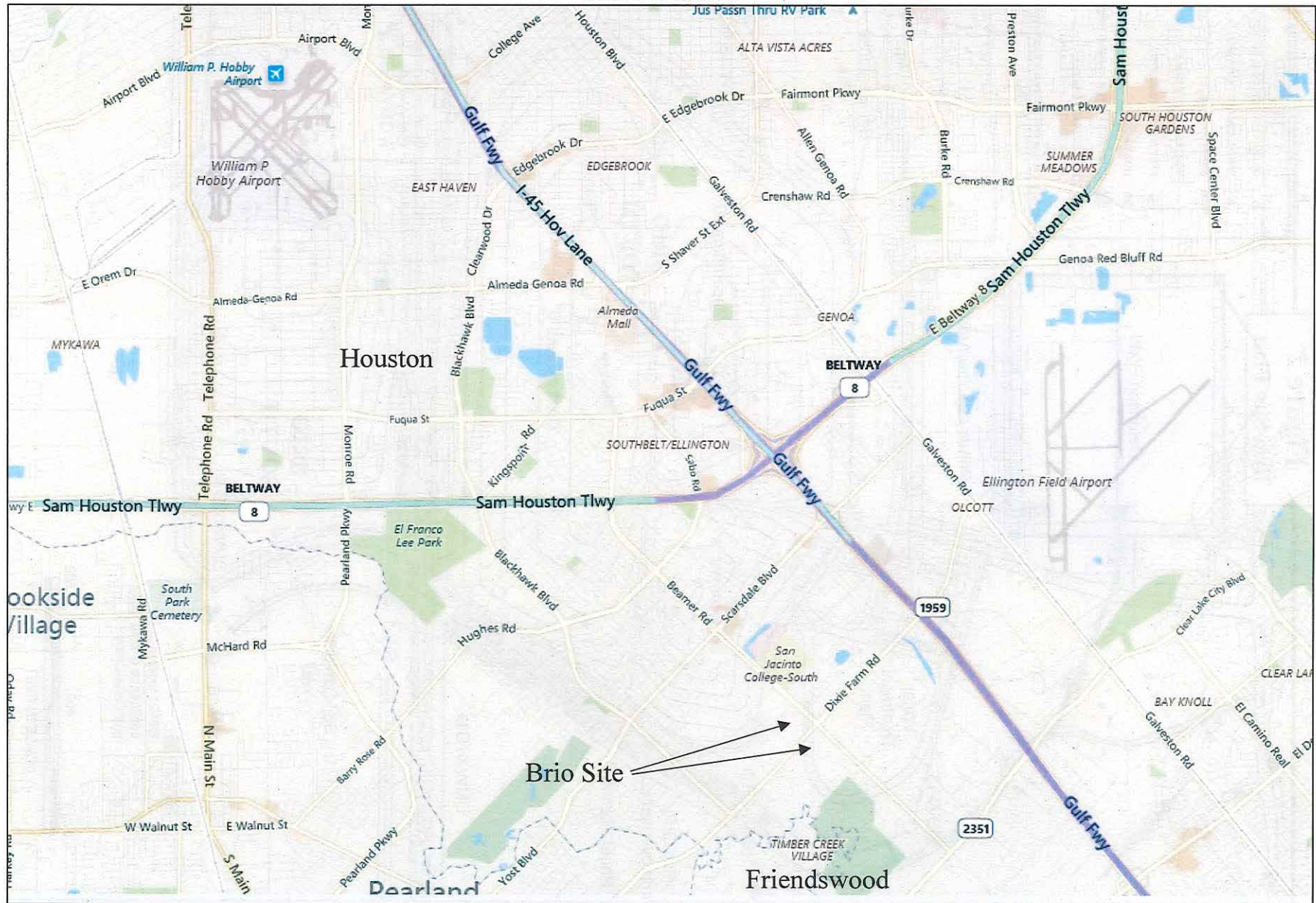


Figure 2
Brio Site Plan

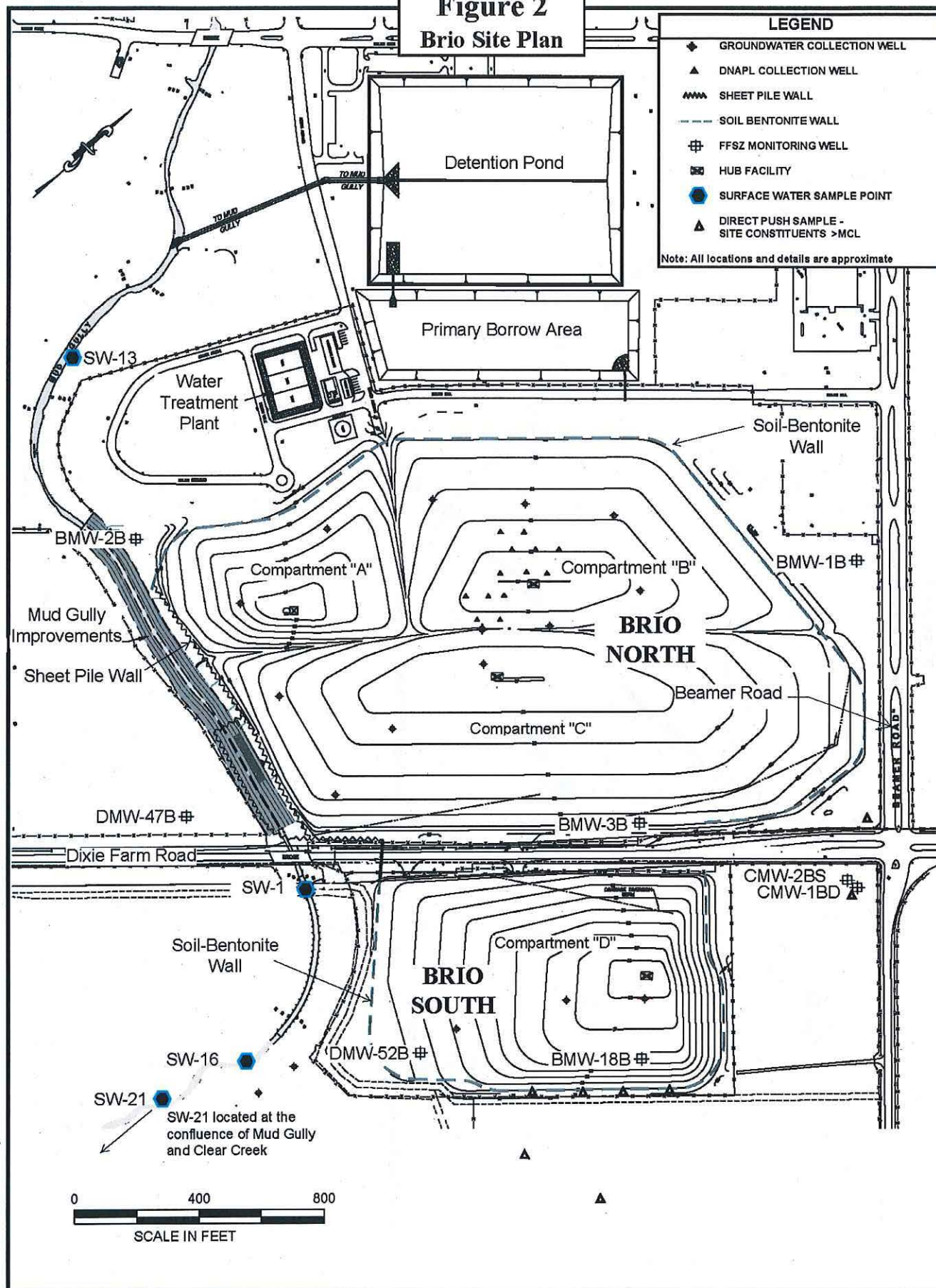
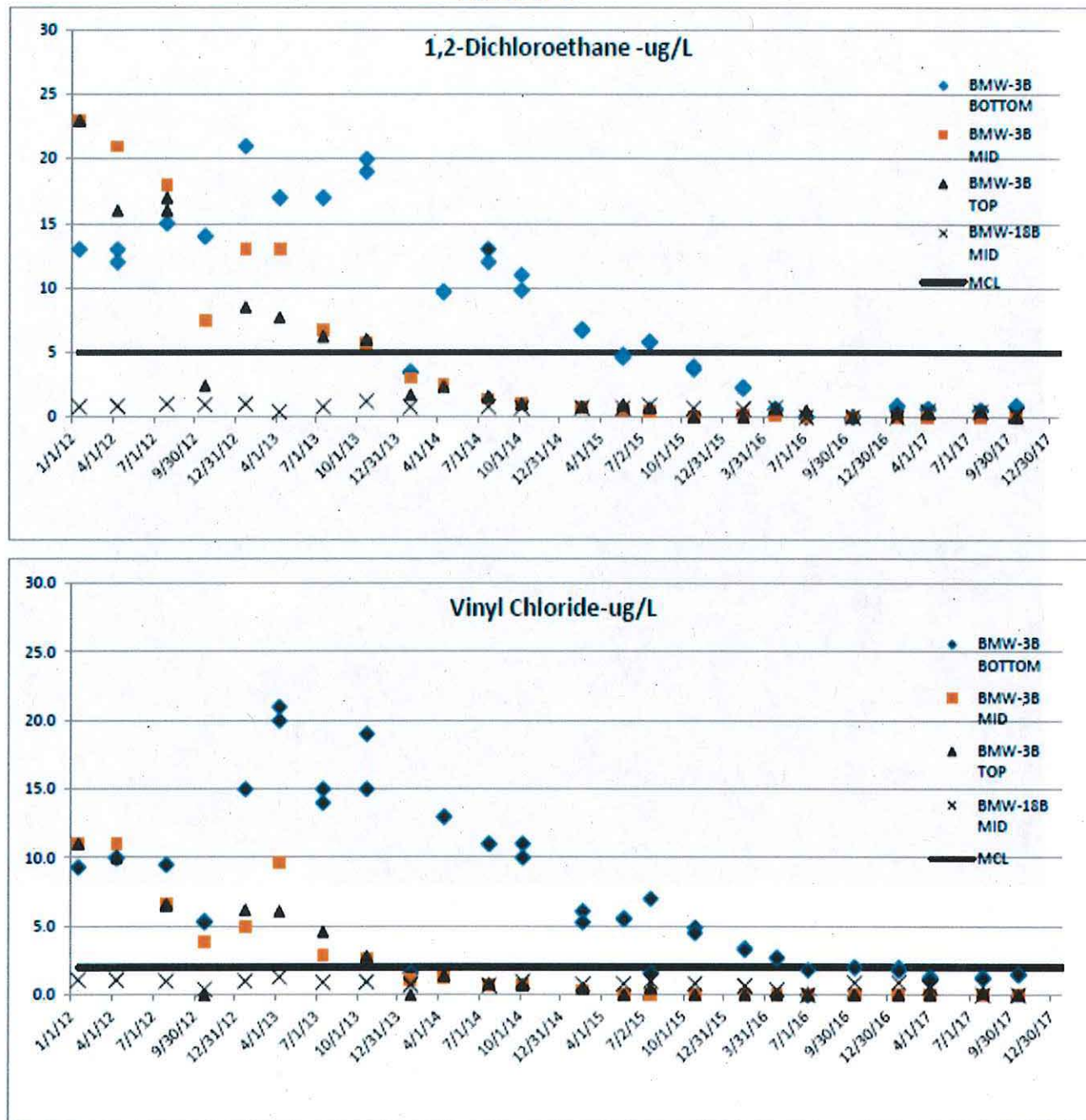


Figure 3
Land Use Surrounding the Brio Site



FIGURE 4



**Sample Results
BMW-3B & BMW-18B**

BRIO SITE FFSZ ANALYTICAL RESULTS - FIFTH FIVE YEAR REVIEW

PARAMETER	MCL	BMW-1B					BMW-2B				
		10/23/13	10/7/14	10/28/15	10/18/16	10/19/17	10/23/13	10/7/14	10/28/15	10/18/16	10/19/17
Benzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trihalomethanes (Total)	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organics (525.2)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorinated Acids (515.1)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All Units are ug/l

All detection limits = 0.5 ug/l

MCL - Maximum Contaminant Level

<MCL - Non-detect or detected less than MCL

NA - Not Analyzed

ND - Non-detect at the detection limit of 0.50 µg/l

J - Estimated value – Detected less than detection limit

Bold/Italicized values indicate concentration above MCL

Semivolatile and Chlorinated Acids are only required on wells that have VOCs greater than MCLs the previous year and may be discontinued if results are less than MCLs.

PARAMETER	MCL	BMW-3B TOP					BMW-3B MID				
		10/23/13	10/7/14	10/28/15	10/18/16	10/19/17	10/23/13	10/7/14	10/28/15	10/18/16	10/19/17
Benzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	0.98	0.97	ND	ND	ND	5.7	0.97	ND	ND	ND
1,1-Dichloroethene	7	ND	ND	ND	ND	ND	0.61	ND	ND	ND	ND
cis-1,2-Dichloroethene	70	0.28 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	2.8	0.71	ND	ND	ND	2.7	0.70	ND	ND	ND
Xylenes (Total)	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trihalomethanes (Total)	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organics (525.2)		NA	NA	NA	NA	NA	<MCL	<MCL	NA	<MCL	<MCL
Chlorinated Acids (515.1)		NA	NA	NA	NA	NA	<MCL	<MCL	NA	<MCL	<MCL

Notes:

All Units are ug/l

All detection limits = 0.5 ug/l

MCL - Maximum Contaminant Level

<MCL - Non-detect or detected less than MCL

NA - Not Analyzed

ND - Non-detect at the detection limit of 0.50 µg/l

J - Estimated value – Detected less than detection limit

Bold/Italicized values indicate concentration above MCL

Semivolatile and Chlorinated Acids are only required on wells that have VOCs greater than MCLs the previous year and may be discontinued if results are less than MCLs.

PARAMETER	MCL	BMW-3B BOTTOM					BMW-18B				
		10/23/13	10/7/14	10/28/15	10/18/16	10/19/17	10/23/13	10/7/14	10/28/15	10/18/16	10/19/17
Benzene	5	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	19	11	3.9	ND	0.87	0.95	0.70	0.67	0.67	0.38 J
1,1-Dichloroethene	7	4.1	2.7	1.3	0.59	0.31 J	0.55	0.39 J	0.35 J	0.29 J	0.19 J
cis-1,2-Dichloroethene	70	0.62	0.54	ND	ND	0.099 J	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	100	1.4	1.1	0.44 J	0.21 J	0.11 J	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	70	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	15	11	4.9	2.0	1.5	1.2	0.96	0.81	0.88	ND
Xylenes (Total)	1000	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trihalomethanes (Total)	100	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organics (525.2)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorinated Acids (515.1)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All Units are ug/l

All detection limits = 0.5 ug/l

MCL - Maximum Contaminant Level

<MCL - Non-detect or detected less than MCL

NA - Not Analyzed

ND - Non-detect at the detection limit of 0.50 µg/l

J - Estimated value – Detected less than detection limit

Bold/Italicized values indicate concentration above MCL

Semivolatile and Chlorinated Acids are only required on wells that have VOCs greater than MCLs the previous year and may be discontinued if results are less than MCLs.

PARAMETER	MCL	DMW-52B					CMW-1BD		CMW-2BS	
		10/23/13	10/7/14	10/28/15	10/18/16	10/19/17	10/18/16	10/19/17	10/18/16	10/19/17
Benzene	5	ND	ND	ND	ND	ND	0.20 J	0.38 J	0.45 J	0.16J
Carbon Tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND	ND	ND	62	37	ND	6.6
1,1-Dichloroethene	7	ND	ND	ND	ND	ND	6.4	2.6	0.53	0.51
cis-1,2-Dichloroethene	70	ND	ND	ND	ND	ND	1.2	0.060	ND	0.12 J
trans-1,2-Dichloroethene	100	ND	ND	ND	ND	ND	1.2	0.44 J	ND	ND
1,2-Dichloropropane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	ND	ND	ND	ND	ND	ND	ND	0.14 J	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	0.12 J	ND
1,2,4-Trichlorobenzene	70	ND	ND	ND	ND	ND	ND	ND	1.6	ND
1,1,1-Trichloroethane	200	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	0.39 J	ND	ND	ND	ND	39	12	2.7	3.1
Xylenes (Total)	1000	ND	ND	ND	ND	ND	ND	ND	0.089 J	ND
Trihalomethanes (Total)	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organics (525.2)		NA	NA	NA	NA	NA	<MCL	<MCL	<MCL	<MCL
Chlorinated Acids (515.1)		NA	NA	NA	NA	NA	<MCL	<MCL	<MCL	<MCL

Notes:

All Units are ug/l

All detection limits = 0.5 ug/l

MCL - Maximum Contaminant Level

<MCL - Non-detect or detected less than MCL

Wells CMW-1BD and CMW-2BS were installed in September 2014. Annual sampling of these wells began in October 2016.

ND - Non-detect at the detection limit of 0.50 µg/l

J - Estimated value – Detected less than detection limit

Bold/Italicized values indicate concentration above MCL

Semivolatile and Chlorinated Acids are only required on wells that have VOCs greater than MCLs the previous year and may be discontinued if results are less than MCLs.

APPENDIX C

BRIO REFINING SUPERFUND SITE DISCHARGE CRITERIA

BRIO REFINING SUPERFUND SITE

DISCHARGE CRITERIA

PARAMETER	DISCHARGE LIMIT (mg/l)	PQL (mg/l)
General Chemistry		
pH	6.0-9.0 (units)	n/a
BOD	81	5
COD	568	20
Sulfur (Sulfide)	0.6	0.2
Phosphorus	4	0.1
Ammonia as N	23	4
Oil and Grease	31	10
Phenolics	0.7	0.2
TSS	62	5
Metals		
Copper	0.093	0.010
Volatiles		
1, 1, 2-Trichloroethane	0.054	0.010
1, 2-Dichloroethane	0.211	0.010
Vinyl Chloride	0.268	0.010
Methylene Chloride	0.089	0.010
Semivolatiles		
Bis(2-chloroethyl)ether	0.757	0.020
Total Carcinogenic PNAs ¹	0.350 (total)	0.020 (each)
Total Noncarcinogenic PNAs ²	0.470 (total)	0.020 (each)

1. Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Dibenzo(a,h)anthracene
Indeno(1,2,3,c,d)pyrene
Chrysene

2. Acenaphthene
Anthracene
Pyrene
Fluoranthene
Fluorene
Naphthalene
Phenanthrene

BOD-Biochemical Oxygen Demand

COD-Chemical Oxygen Demand

TSS-Total Suspended Particulates

PNA-Polynuclear Aromatic Hydrocarbons

APPENDIX D

SITE INSPECTION CHECKLIST AND PHOTOS

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST

I. SITE INFORMATION	
Site name: Brio Refining Superfund Site	Date of inspection: March 28, 2018
Location and Region: Harris County, TX - EPA Region 6	EPA ID: TXD980625453
Agency, office, or company leading the five-year review: EPA	Weather/temperature: Overcast 80°F
Remedy Includes: (Check all that apply) <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input checked="" type="checkbox"/> Other <u>DNAPL collection system, air monitoring, long-term groundwater monitoring, cover gas collection and treatment.</u> </div> <div style="width: 50%;"> <input type="checkbox"/> Monitored natural attenuation <input checked="" type="checkbox"/> Groundwater containment (slurry wall) <input checked="" type="checkbox"/> Vertical barrier walls </div> </div>	
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager <u>John Danna</u> <u>Brio Site Manager</u> <u>3/28/18</u> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. <u>281-922-1054</u> Problems, suggestions; <input type="checkbox"/> Report attached <u>Recommended to further delineate affected FFSZ groundwater, and recommended to continue site maintenance as needed.</u>	
2. O&M staff <u>Lawrence Engle</u> <u>Brio Site Staff</u> <u>3/28/18</u> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. <u>281-922-1054</u> Problems, suggestions; <input type="checkbox"/> Report attached <u>Recommended to further delineate affected FFSZ groundwater, and recommended to continue site maintenance as needed.</u>	
3. EPA RPM <u>Gary Miller</u> <u>Remedial Project Manager</u> <u>3/28/18</u> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. <u>214-665-8318</u> Problems, suggestions; <input type="checkbox"/> Report attached <u>Recommended to further delineate affected FFSZ groundwater, and recommended to continue site maintenance as needed.</u>	

4.	Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency: <u>Texas Commission on Environmental Quality (TCEQ)</u> Contact: <u>Sherell Heidt</u> Project Manager <u>7/16/2018</u> <u>713-767-3708</u> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Name Title Date Phone no. </div> Problems; suggestions: <input checked="" type="checkbox"/> Report attached in Appendix F.
5.	Other interviews (optional) Name: <u>Marie Flickinger</u> Title: <u>Chairperson-Brio Site Community Advisory Group and Owner-South Belt Ellington</u> <u>Leader News Paper</u> <u>Date: 7/17/2018</u> <u>Phone no.: 281-481-5656</u> Problems; suggestions: <input checked="" type="checkbox"/> Report attached in Appendix F.
III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)	
1.	O&M Documents <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input checked="" type="checkbox"/> O&M manual <input checked="" type="checkbox"/> As-built drawings <input checked="" type="checkbox"/> Maintenance logs </div> <div style="width: 45%;"> <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A </div> </div> Remarks: <u>O&M manual should be brought up to date to reflect current water treatment plant layout and the South Plume recovery well check procedure. Waste shipment manifests are available and up to date.</u>
2.	Site-Specific Health and Safety Plan <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Contingency plan/emergency response plan <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> N/A Remarks: <u>Update plans with current emergency contact phone numbers</u>
3.	O&M and OSHA Training Records <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A Remarks: _____
4.	Permits and Service Agreements <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ </div> <div style="width: 45%;"> <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A </div> </div> Remarks: <u>All operations are authorized by site plans with approval and oversight from EPA.</u>
5.	Gas Generation Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____
6.	Settlement Monument Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____
7.	Groundwater Monitoring Records <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A Remarks: _____

8.	Leachate Extraction Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																																																												
Remarks _____																																																																
9.	Discharge Compliance Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																																																												
<input type="checkbox"/> Air <input checked="" type="checkbox"/> Water (effluent)		<input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A																																																												
Remarks _____																																																																
10.	Daily Access/Security Logs	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A																																																												
Remarks _____																																																																
IV. O&M COSTS																																																																
1.	O&M Organization																																																															
<input type="checkbox"/> State in-house <input type="checkbox"/> Contractor for State																																																																
<input checked="" type="checkbox"/> PRP in-house <input type="checkbox"/> Contractor for PRP																																																																
<input type="checkbox"/> Federal Facility in-house <input type="checkbox"/> Contractor for Federal Facility																																																																
<input type="checkbox"/> Other _____																																																																
2.	O&M Cost Records																																																															
<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date																																																																
<input checked="" type="checkbox"/> Funding mechanism/agreement in place (Funded by PRP)																																																																
Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached																																																																
Total annual cost by year for review period if available																																																																
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">From</td> <td style="width: 15%;">1/1/13</td> <td style="width: 10%;">To</td> <td style="width: 15%;">12/31/13</td> <td style="width: 15%;">\$886k</td> <td style="width: 35%;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td></td> <td>Date</td> <td></td> <td>Date</td> <td>Total cost</td> <td></td> </tr> <tr> <td>From</td> <td>1/1/14</td> <td>To</td> <td>12/31/14</td> <td>\$1,562k</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td></td> <td>Date</td> <td></td> <td>Date</td> <td>Total cost</td> <td></td> </tr> <tr> <td>From</td> <td>1/1/15</td> <td>To</td> <td>12/31/15</td> <td>\$1,573k</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td></td> <td>Date</td> <td></td> <td>Date</td> <td>Total cost</td> <td></td> </tr> <tr> <td>From</td> <td>1/1/16</td> <td>To</td> <td>12/31/16</td> <td>\$910k</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td></td> <td>Date</td> <td></td> <td>Date</td> <td>Total cost</td> <td></td> </tr> <tr> <td>From</td> <td>1/1/17</td> <td>To</td> <td>12/31/17</td> <td>\$760k</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td></td> <td>Date</td> <td></td> <td>Date</td> <td>Total cost</td> <td></td> </tr> </table>					From	1/1/13	To	12/31/13	\$886k	<input type="checkbox"/> Breakdown attached		Date		Date	Total cost		From	1/1/14	To	12/31/14	\$1,562k	<input type="checkbox"/> Breakdown attached		Date		Date	Total cost		From	1/1/15	To	12/31/15	\$1,573k	<input type="checkbox"/> Breakdown attached		Date		Date	Total cost		From	1/1/16	To	12/31/16	\$910k	<input type="checkbox"/> Breakdown attached		Date		Date	Total cost		From	1/1/17	To	12/31/17	\$760k	<input type="checkbox"/> Breakdown attached		Date		Date	Total cost	
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From	1/1/17	To	12/31/17	\$760k	<input type="checkbox"/> Breakdown attached																																																											
	Date		Date	Total cost																																																												
3.	Unanticipated or Unusually High O&M Costs During Review Period																																																															
Describe costs and reasons: <u>Phase II groundwater investigation - \$1.2M.</u>																																																																

V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Fencing			
1.	<input checked="" type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Gates secured <input type="checkbox"/> N/A Remarks: Gates and fencing were in good condition and secured.		
B. Other Access Restrictions			
1.	Signs and other security measures <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A Remarks: There is a sign at the site entrance identifying the site as the Brio Refining Superfund Site with the RPM's name and phone number. There is a sign on the front gate with an emergency contact number. "No Trespassing" signs are mounted on site gates and approximately every 100 feet along the fence line. There is security lighting in critical areas.		
C. Institutional Controls (ICs)			
1.	Implementation and enforcement Site conditions imply ICs not properly implemented <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A Site conditions imply ICs not being fully enforced <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A Type of monitoring (e.g., self-reporting, drive by): <u>Self Reporting</u> Frequency: <u>IC monitoring is conducted daily by onsite PRP staff.</u> Responsible party/agency: <u>PRP</u> Contact: <u>John Danna</u> <u>Site Manager</u> <u>281-922-1054</u> <div style="display: flex; justify-content: space-around; margin-top: -10px;"> Name Title Date Phone no. </div> Reporting is up-to-date <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Reports are verified by the lead agency <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Specific requirements in deed or decision documents have been met <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Violations have been reported <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Other problems or suggestions: <input type="checkbox"/> Report attached <u>Institutional controls are complete and included in Appendix G of the FYR report.</u>		
2.	Adequacy <input checked="" type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A Remarks: _____		
D. General			
1.	Vandalism/trespassing <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident Remarks: <u>On March 17, 2017, a man climbed over the Brio South Fence along Dixie Farm Road while being chased by police. He was arrested and no one was injured. The police notified Site management as the event was in progress. There was no damage to the Site or remedy. EPA was notified.</u>		
2.	Land use changes on site <input type="checkbox"/> N/A Remarks: <u>None</u>		

3.	Land use changes off site <input type="checkbox"/> N/A Remarks: <u>A tract of land adjacent to the Brio Site entrance is used by the owner as a trucking yard and aggregate storage. There is increasing residential development near the Site.</u>
VI. GENERAL SITE CONDITIONS	
A. Roads <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Roads damaged <input checked="" type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N/A Remarks _____
B. Other Site Conditions	
Remarks <u>The Site is in good condition and neatly maintained.</u>	
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Landfill Surface	
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____
2.	Cracks <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks <u>Minor cover erosion in several areas.</u>
4.	Holes <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Holes not evident Areal extent _____ Depth _____ Remarks _____
5.	Vegetative Cover <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks _____
6.	Alternative Cover (armored rock, concrete, etc.) <input checked="" type="checkbox"/> N/A Remarks _____
7.	Bulges <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____

8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability <input type="checkbox"/> Slide <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks _____	
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	Settlement <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement Areal extent _____ Depth _____ Remarks _____	
2.	Material Degradation <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation Material type _____ Areal extent _____ Remarks _____	
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion Areal extent _____ Depth _____ Remarks _____	
4.	Undercutting <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of undercutting Areal extent _____ Depth _____ Remarks _____	

5.	Obstructions Type _____ <input type="checkbox"/> Location shown on site map Size _____ Remarks _____	<input type="checkbox"/> No obstructions Areal extent _____
6.	Excessive Vegetative Growth Type _____ <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____	
D. Cover Penetrations <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	Gas Vents <input type="checkbox"/> Active <input checked="" type="checkbox"/> Passive <input type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <u>Gas vents are connected to carbon canisters with hoses and the openings cannot be locked.</u>	
2.	Gas Monitoring Probes <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____	
3.	Monitoring Wells (within surface area of landfill) <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks: _____	
4.	Leachate Extraction Wells <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____	
5.	Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input checked="" type="checkbox"/> N/A Remarks _____	
E. Gas Collection and Treatment <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	Gas Treatment Facilities <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks <u>Passive with carbon canisters. Gas collection records are up to date.</u>	

2.	Gas Collection Wells, Manifolds and Piping	<input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____
F. Cover Drainage Layer <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks: Concrete pads at most outlets.
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Siltation	Areal extent _____ Depth _____ <input type="checkbox"/> N/A <input type="checkbox"/> Siltation not evident Remarks _____
2.	Erosion	Areal extent _____ Depth _____ <input type="checkbox"/> Erosion not evident Remarks _____
3.	Outlet Works	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____
4.	Dam	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____
H. Retaining Walls <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Deformations	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident Horizontal displacement _____ Vertical displacement _____ Rotational displacement _____ Remarks _____
2.	Degradation	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident Remarks _____

I. Perimeter Ditches/Off-Site Discharge		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Siltation <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Siltation not evident Areal extent _____ Depth _____ Remarks _____		
2.	Vegetative Growth <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____		
3.	Erosion <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____		
4.	Discharge Structure <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____		
VIII. VERTICAL BARRIER WALLS		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Settlement <input checked="" type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____		
2.	Performance Monitoring Type of monitoring: <input checked="" type="checkbox"/> Performance not monitored Frequency: _____ <input type="checkbox"/> Evidence of breaching Head differential: _____ Remarks: _____		
IX. GROUNDWATER/SURFACE WATER REMEDIES		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
A. Groundwater Extraction Wells, Pumps, and Pipelines		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Pumps, Wellhead Plumbing, and Electrical <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks: _____		
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____		
3.	Spare Parts and Equipment <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____		

B. Surface Water Collection Structures, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____
C. Treatment System <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Treatment Train (Check components that apply) <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Metals removal <input checked="" type="checkbox"/> Air stripping <input type="checkbox"/> Filters <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) <input type="checkbox"/> Others _____ </div> <div> <input checked="" type="checkbox"/> Oil/water separation* <input checked="" type="checkbox"/> Carbon adsorbers <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> Sampling ports properly marked and functional <input checked="" type="checkbox"/> Sampling/maintenance log displayed and up to date <input checked="" type="checkbox"/> Equipment properly identified <input checked="" type="checkbox"/> Quantity of groundwater treated annually: <u>Approximately 2-3 Mgal</u> <input type="checkbox"/> Quantity of surface water treated annually <u>None</u> </div> <div style="text-align: right;"> <input type="checkbox"/> Bioremediation </div> </div> Remarks: <u>*Includes DNAPL/water separation.</u>
2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks: _____
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____

5.	Treatment Building(s)	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input checked="" type="checkbox"/> Chemicals and equipment properly stored Remarks _____
6.	Monitoring Wells (pump and treatment remedy)	<input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks: _____
D. Monitoring Data		
1.	Monitoring Data	<input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests: <input checked="" type="checkbox"/> Groundwater plume is effectively contained (NSCZ). <input checked="" type="checkbox"/> Contaminant concentrations are declining Remarks: <u>Contaminant concentrations are declining at FFSZ groundwater monitoring well BMW-3B and are currently below MCLs. Concentrations are stable at FFSZ monitoring wells CMW-1BD and CMW-2BS and are above MCLs for two compounds.</u>	
E. Monitored Natural Attenuation		
1.	Monitoring Wells (natural attenuation remedy)	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____
X. OTHER REMEDIES		
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.		

XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy	<p>Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).</p> <p>The overall goal of site operations is the containment of groundwater and air emissions from the Site. The vertical barrier wall consisting of the soil bentonite wall and sheet pile wall prevents the downgradient lateral movement of contaminated groundwater. The natural horizontal barrier provided by the Middle Clay Unit, combined with a natural upward pressure differential and an artificial upward pressure differential provided by extracting the NSCZ groundwater, prevents or greatly inhibits the downward movement of contaminants. The flexible membrane layer of the cap system prevents the infiltration of surface water and the escape of volatile gases from the contaminated soil.</p> <p>The site inspection conducted March 28, 2018 indicates that the remedy is effective and operating as designed.</p>
B. Adequacy of O&M	<p>Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.</p> <p><u>O&M procedures are adequate to the current and long-term protectiveness of the remedy.</u></p>
C. Early Indicators of Potential Remedy Problems	<p>Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p><u>While the remedy remains protective, consistent with the remedial action objectives of the response action, the BSTF should proceed with further delineating the extent of affected FFSZ groundwater. The results of this investigation, along with previous FFSZ groundwater investigations, should form the basis for remedial action to mitigate affected FFSZ groundwater.</u></p>
D. Opportunities for Optimization	<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <p><u>None.</u></p>

Brio Refining Superfund Site
Dixie Oil Processors Superfund Site
Harris County, Texas

Five-Year Review Site Inspection: March 28, 2018

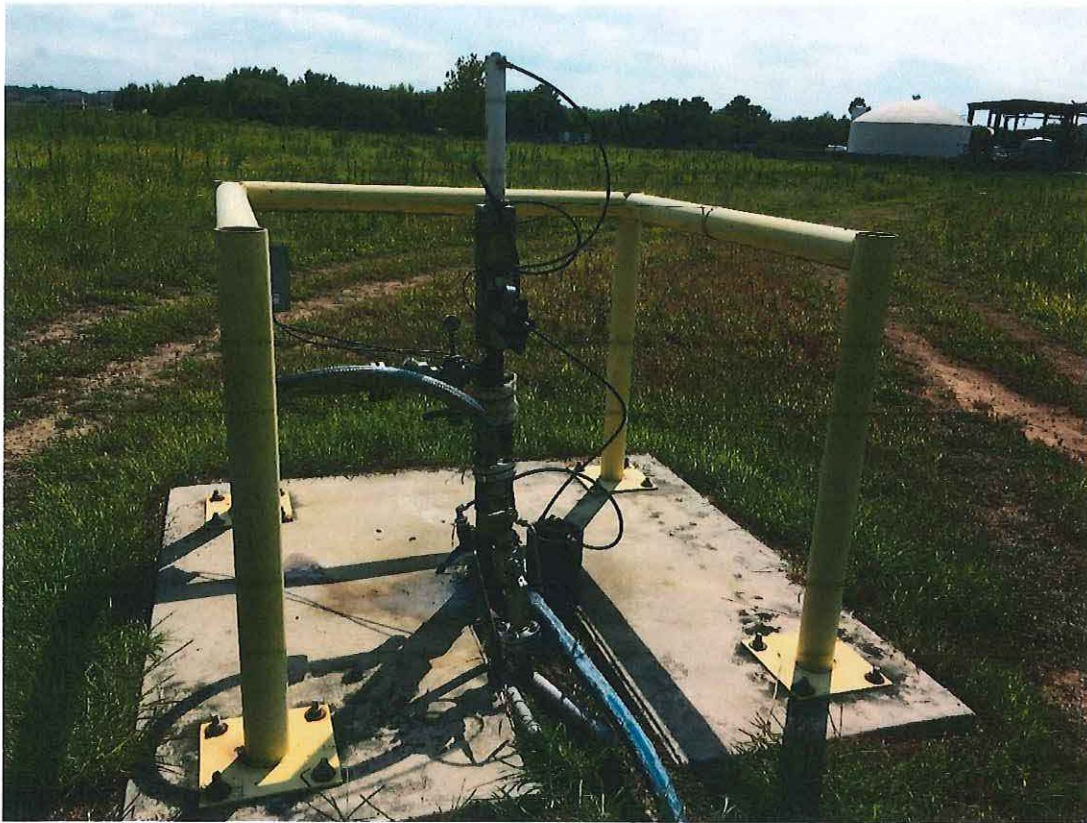
<u>Name:</u>	<u>Agency/Company:</u>	<u>E-Mail Address:</u>
SHERELL HEIDT	TCEQ	shereil.heidt@tceq ^{TEXAS} .gov
GARY MILLER	EPA	MILLER.GARY@EPA.GOV
David C. Abshire	USEPA	abshire-david@epa.gov
Larry Engk	DDP	-
Roger Pokluda	GSI	rjpokluda@gsi-net.com
John Danna	BSTF	jdanna@brioftrust.com
MAT FORESMAN	BSTF	



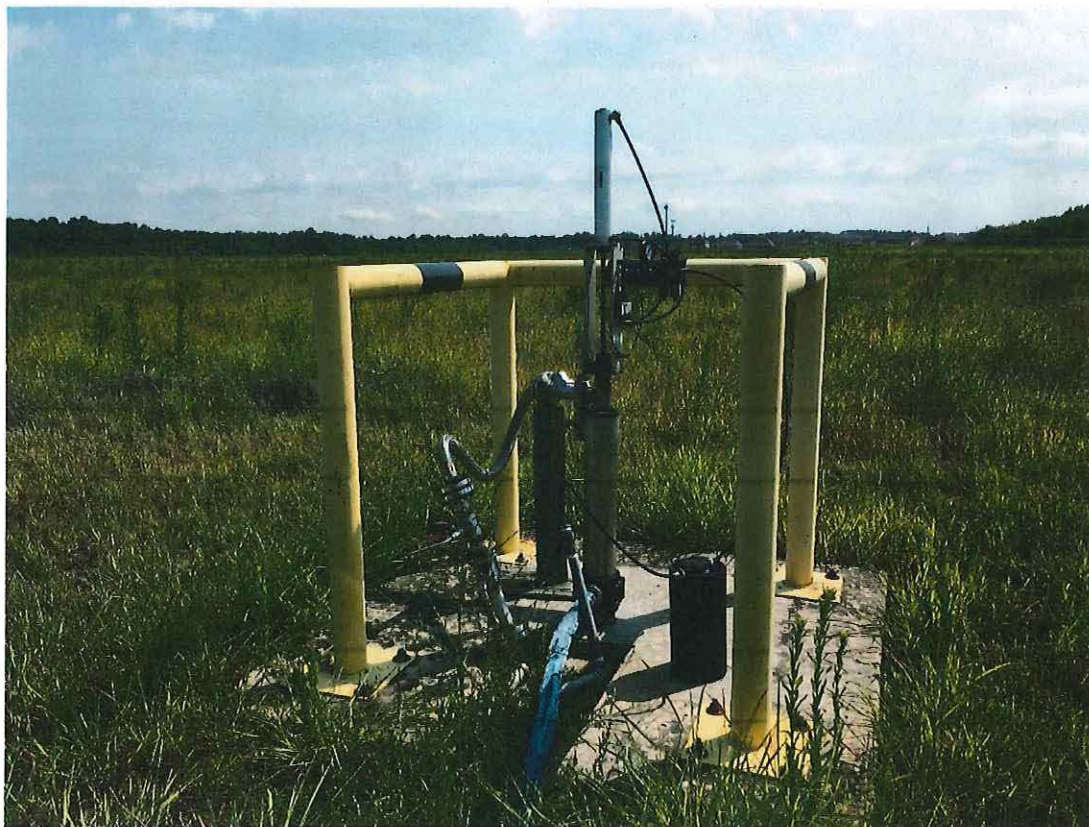
Recovered Groundwater and DNAPL Storage Tanks



Groundwater Treatment Plant



Groundwater Recovery Well



DNAPL Recovery Well



Hub B Groundwater Recovery System



Cover System and DNAPL Recovery Wells at Hub B Looking South



Compartment B Cover System and DNAPL Recovery Well Looking West



Brio North Drainage Road Looking Northeast



Compartment C Cover System Looking South



Brio North Barrier Wall Alignment Looking Southwest



Groundwater Monitoring Well BMW-3B



Compartment C Cover System Looking Northwest



Brio North Drainage Road Looking Southwest



Brio North Drainage Road Looking Northeast



Brio North Sheet Pile Barrier Wall and Drainage Road Looking Northwest



Brio North Sheet Pile Barrier Wall and Drainage Road Looking Southeast



Compartment A Cover System Looking Northwest



Brio North Drainage Road Looking Northwest



Compartment D Cover System Looking East (Brio South)



Compartment D Gas Collection Vent



Compartment D looking South



Groundwater Monitoring Well BMW-18B

APPENDIX E

ARARs Identified in 1998 Record of Decision and 1997 Amended Record of Decision

GENERAL REQUIREMENTS

ARARs Included in 1988 ROD:

1. Standards Applicable to Generators of Hazardous Waste (40 CFR Part 262)
2. *Standards Applicable to Transporters of Hazardous Waste (40 CFR Part 263)*
3. Hazardous Materials Transportation (49 CFR Parts 107, 174-177)
4. Security (40 CFR 264.14)
5. General Requirements for Ignitable, Reactive, or Incompatible Wastes (40 CFR 264.17)
6. Disposal or Decontamination of Equipment, Structures, and Soils (40 CFR 264.114)
7. Post-Closure Care and Use of Property (40 CFR 264.117)

ARARs Included in 1997 Amended ROD:

1. *Risk Reduction Standards (30 TAC Chapter 335, Subchapter S)* - as of September 23, 1999, new Rule is the Texas Risk Reduction Program (TRRP; 30 TAC 350) and addresses the air, surface water, groundwater and soil pathways.

AIR PATHWAY

ARARs Included in 1988 ROD:

1. *Texas Clean Air Act (Section 4.01)* - the Texas Clean Air Act was amended and codified into the Texas Health and Safety Code (September 1, 1989)

ARARs Included in 1997 Amended ROD:

1. *Standard Exemption 68 and 118 (30 TAC Chapter 116)* - outdated TCEQ Standard Exemptions as of April 5, 1995, and June 18, 1992, respectively

SURFACE WATER PATHWAY

ARARs Included in 1988 ROD:

1. *State Water Quality Standards (31 TAC 329.41-.49, 333.17-.19)* - as applied to Mud Gully - current surface water quality standards codified as 30 TAC 307
2. Federal Water Quality Criteria for Fresh Water Aquatic Life Protection - as applied to Mud Gully
3. Floodplain Management (Executive Order 11988)

ARARs Included in 1997 Amended ROD:

1. Texas Surface Water Quality Standards (30 TAC 307)
Texas Commission on Environmental Quality (TCEQ) promulgated new surface water standards in August 2002 under 30 TAC 307. These standards, along with calculations presented in the Texas Total Maximum Daily Load (TMDL) Program, are used as Surface Water Quality Goals for Mud Gully and Clear Creek. The

original Surface Water Performance Standards listed in the 1997 Amended ROD continue to be used for compliance.

GROUNDWATER PATHWAY

ARARs Included in 1988 ROD:

1. Safe Drinking Water Act Primary and Secondary MCLs - as applied to the Fifty-Foot Sand

SOILS PATHWAY

ARARs Included in 1988 ROD:

1. Cap and Cover (40 CFR Part 264, Subpart N)
2. *Vault (40 CFR Part 264, Subpart N)*

Notes:

1. ARARs taken from: i) Table 4-10 of the 1988 ROD, and ii) page 23 of the 1997 Amended ROD.
2. ARARs that are no longer current under the existing remedy are shown in *italics*.

APPENDIX F

PUBLIC NOTICE
AND
INTERVIEW NOTES

Brio Refining, Inc. Superfund Site PUBLIC NOTICE U.S. EPA Region 6 Begins Fifth Five-Year Review of Site Remedy

The U.S. Environmental Protection Agency Region 6 (EPA) has begun the Fifth Five-Year Review of the remedy for the Brio Refining, Inc. Superfund Site in Harris County, Texas. The review seeks to confirm that the cleanup conducted at the site continues to protect human health and the environment. The site, which was a former petrochemical refining facility, is located in southern Harris County at the intersection of Beamer Road and Dixie Farm Road.

Once completed, the results of the Five-Year Review will be made available to the public at the following Information Repository:

Parker Williams Library

at San Jacinto College South Campus
13735 Beamer Road
Houston, Texas 77089

Information about the Brio Refinery, Inc. Site is also available on the Internet at: <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0602601>.

For more information about the Brio Refinery, Inc. Site, you may contact Gary Miller at 214-665-8318 or by email at millergaryg@epa.gov.



REGULATIONS GOVERNING PUBLICATION

PUBLISHER'S CERTIFICATE

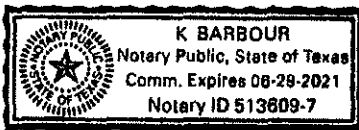
STATE OF TEXAS }
COUNTY OF HARRIS } ss:

Personally appeared before the undersigned a notary public within and for said county and State, *Marie Flickinger*, publisher of the *South Belt-Ellington Leader*, a newspaper published at *11555 Beamer Road, Houston*, county of *Harris*, State of *Texas*, who, being duly sworn, states on oath that the notices of Brio Superfund Site a true copy of which is hereto annexed, was published in said newspaper in its issue of the 26th day of April, 20 18.

Acknowledgement of the publisher must be made before a notary public or other official authorized to administer oaths.

Marie Flickinger
Publisher

SUBSCRIBED AND SWORN TO before me this the 26 day of June, 2018.




K Barbour

Notary Public, State of Texas

My commission expires: June 29, 2021

(SEAL)

INTERVIEW RECORD			
Site Name: Brio Refinery Superfund Site		EPA ID No.: TXD980625453	
Subject: Fifth Five-Year Review		Time:	Date:
Type: Telephone	Visit	<input checked="" type="checkbox"/> Other (Email)	
Location of Visit: Via Email		Incoming	Outgoing
Contact Made By:			
Name: Gary Miller	Title: Remedial Project Manager	Organization: US EPA	
Individual Contacted:			
Name: Sherell Heidt	Title: Project Manager	Organization: TCEQ	
Telephone No: 713-767-3708		Street Address: 5425 Polk St, Ste H	
Fax No:		Houston TX 77023-1452	
E-Mail Address: sherell.heidt@tceq.texas.gov			

Summary Of Conversation (Via Email)
<p>What is your overall impression of the project? (general sentiment)</p> <p>RESPONSE: The Brio Refinery Superfund site is well maintained. In 2015, the Project Review Group responsible for monitoring the implementation of the Wetland Creation and Forest Projects south of the site certified that the projects were successfully achieved and maintained. The TCEQ supports the Brio Site Task Force actions in maintaining this Natural Resource Restoration project, which encompasses 144 acres.</p> <p>Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by regarding the site? If so, please give purpose and results.</p> <p>RESPONSE: No.</p> <p>Have there been any complaints, violations, or other incidents related to the site requiring a response by your office? give details of the events and results of the responses.</p> <p>RESPONSE: No.</p> <p>Do you feel well informed about the site's activities and progress?</p> <p>RESPONSE: Yes. The TCEQ attends quarterly meetings, in which Site activities are discussed.</p> <p>Do you have any comments, suggestions, or recommendations regarding the site's management or operation?</p> <p>RESPONSE: The TCEQ supports the Brio Site Task Force in their current and future efforts of gathering data to delineate the south plume of 1,2 dichloroethane and vinyl chloride in the Fifty-Foot-Sand Zone (FFSZ) and confirm whether the plume is stable and attenuating. Currently, the Brio Site Task Force is in the final stages of finalizing a Sampling Plan to investigate the southeast area of the plume. In the near future, the TCEQ looks forward to receiving the Action Plan to address the plume. Also, the Brio Site Task Force has increased monitoring frequency in the fifty foot sand zone wells, increased pumping in the Numerous Sand Channel Zone (NSCZ) recovery system, conducted an ongoing groundwater investigation of the south plume located in the fifty foot sand zone, and is continuously evaluating whether there is evidence of natural degradation.</p> <p>I consent to EPA publishing the information on this form. Signed:  Date: 7/16/20</p>

INTERVIEW RECORD

Site Name: Brio Refinery Superfund Site		EPA ID No.: TXD980625453	
Subject: Fifth Five-Year Review		Time:	Date:
Type: Telephone Visit <input checked="" type="checkbox"/> Other (Email)	Incoming Outgoing		
Location of Visit: Via Email			

Contact Made By:

Name: Gary Miller	Title: Remedial Project Manager	Organization: US EPA
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Individual Contacted:

Name: MARIE Flickinger	Title: CHG Rep	Organization:
Telephone No: 281-481-5656	Street Address: 11555 Beacon	
Fax No:		
E-Mail Address: mynews@swellbelt-houston.com		

Summary Of Conversation (Via Email)

What is your overall impression of the project? (general sentiment) *After 25 years, the*
RESPONSE: *remedy has been protective of the community.*

Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by regarding the site? If so, please give purpose and results.

RESPONSE: *Yes the community has been informed. Mitigation of contaminants 50 feet below ground are being monitored & addressed.*

Have there been any complaints, violations, or other incidents related to the site requiring a response by your office? give details of the events and results of the responses.

RESPONSE: *All concerns over past 25 years have been properly addressed.*

Do you feel well informed about the site's activities and progress?

RESPONSE: *Absolutely*

Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

RESPONSE: *I wish the community had a more realistic & knowledgeable vision of Brio. Not sure how to accomplish this.*

I consent to EPA publishing the information on this form. Signed: *Marie Flickinger* Date: *7-17-18*

APPENDIX G

INSTITUTIONAL CONTROLS

875 051230
HOLD FOR TEXAS AMERICAN TITLE COMPANY ✓

GRANT OF ENVIRONMENTAL DEED RESTRICTIONS AND RIGHT OF ACCESS

STATE OF TEXAS

§

KNOW ALL BY THESE PRESENTS THAT:

§

§

HARRIS COUNTY

§

THIS GRANT OF ENVIRONMENTAL DEED RESTRICTIONS AND RIGHT OF ACCESS is granted by **RALPH LAWRENCE LOWE, JR.** ("Grantor") in favor of **UMB Bank N.A.**, a national banking association, as Trustee for the Brio Site Trust, in its fiduciary and not in its individual capacity ("Grantee"), as the owner of the Benefited Property (hereinafter defined).

RECITALS

A. Grantor is the owner of certain real property located in Harris County, Texas, more particularly described in Exhibit A attached hereto and made a part hereof (the "Restricted Property"), which property is located within the boundaries of the site referred to as the Brio Refining Superfund Site, located in Harris County Texas and more particularly described in Exhibit B attached hereto and made a part hereof (the "Brio Site").

B. Grantee is the owner of certain real property adjacent to and/or in the vicinity of the Restricted Property, which property is more particularly described in Exhibit C attached hereto and made a part hereof (the "Benefited Property").

C. The Brio Site is the subject of a response action under the jurisdiction of the United States Environmental Protection Agency ("EPA") pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA"), 42 U.S.C. § 9601 *et seq.*, and the National Contingency Plan, 40 C.F.R. § 300.400 *et seq.*

D. Pursuant to section 105 of CERCLA, EPA placed the Brio Site on the National Priorities List, set forth at 40 C.F.R. Part 300, on March 31, 1989.

E. The EPA issued its Record of Decision (ROD) R06-88/031 for the Brio Site on March 31, 1988 (the "1988 ROD"). The EPA issued an Amended ROD for the Brio Site on July 2, 1997 (the "Amended ROD").

F. In accordance with the terms of the 1988 ROD, the Amended ROD, the Administrative Order on Consent, Docket No. CERCLA VI-13-88, between the EPA and Brio Refining, Inc., entered in 1988; the Brio Site Consent Decree between the United States and AMOCO Chemical Co, et al., entered on April 4, 1991; and the Brio Refining Site Amended Consent Decree between the United States and AMOCO Chemical Co., et al., entered on March 8, 1999 (the "Amended Consent Decree"), remedial action was conducted at the Brio Site (the "Remedial Action") by the Brio Site Task Force, comprised of those parties listed on Exhibit D attached hereto and made a part hereof or their predecessors or successors-in-interest (the "Brio Settlers").

G. Pursuant to the terms of that certain Consent Decree between the United States and Ralph L. Lowe, the then owner of the Restricted Property, entered on December 28, 1992 (the "Lowe Consent Decree"), the owner of the Restricted Property, Ralph L. Lowe, agreed to comply with any requirements in the Record of Decision for the Brio Site applicable to owners of any portion of the Site, which included the placement of certain restrictions on the use of the Brio Site and the grant certain rights of access in order to maintain the integrity and effectiveness of the Remedial Action.

GRANT

NOW, THEREFORE, in consideration of the agreements reached in the Lowe Consent Decree and other good and valuable consideration, the receipt and sufficiency of which are acknowledged, Grantor covenants with the Grantee, EPA and their assigns, that he has the right to convey the easements, rights, obligations, covenants, and restrictions (collectively, the "Deed Restrictions") set forth herein, and Grantor further covenants with Grantee, EPA and their assigns that Grantor, his executors, heirs, successors and assigns will warrant and forever defend the same unto Grantee and its assigns forever against any person whomsoever claiming or to claim the same; and Grantor grants the Deed Restrictions in favor of Grantee and its assigns on the following terms and conditions:

1. Right of Access. Grantor hereby grants Grantee and its assigns a perpetual right of access in, on, upon, over, and through the Restricted Property for the purposes of: implementing, overseeing, operating, maintaining, and monitoring the remedial activities relating to the Brio Site, which include but are not limited to inspecting, testing, surveying, monitoring, and treating hazardous substances on, over, under, and across the surface of the Brio Site.

2. Scope of Restrictions. These Deed Restrictions affect those portion of the tracts or parcels of real property in Harris County, Texas owned by Grantor as described in Exhibit A attached hereto and made a part hereof (the "Restricted Property").

3. Information Concerning Site Condition. The Brio Site Task Force performed a remediation of the Brio Site, including the Restricted Property. Information about the known waste constituents that have been left in place on the Restricted Property is attached hereto as Exhibit E and is made part of this filing. Further information concerning this matter may be found by an examination of the EPA's Brio Refining Superfund Site Administrative Record at EPA Region 6, 1445 Ross Avenue, Dallas, Texas, 75202, and at the San Jacinto College-South Campus, 13735 Beamer Rd., Houston, Texas, 77089.

4. EPA Authority. EPA derives its authority to protect the environment and to review the remediation of the Brio Site from Section 101, *et seq.*, of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, ("CERCLA"), 42 U.S.C. § 9601, *et seq.*, and 40 C.F.R. Part 300. In accordance with this authority, EPA requires Grantor, as the owner of the Restricted Property, to provide the United States and its representatives access to the Restricted Property for the purposes of conducting any activity related to the Remedial Action and the Lowe Consent Decree. Under the Lowe Consent Decree,

the then owner of the Restricted Property, Ralph L. Lowe, agreed to comply with any requirements in the Record of Decision for the Brio Site applicable to owners of any portion of the Brio Site. The 1988 ROD and the Lowe Consent Decree recognized that permanent site control, including the imposition of necessary deed notices and restrictions (if possible) and restriction of access to the Brio Site, would be necessary. The 1988 ROD and the Lowe Consent Decree also required long term, effective site control. Effective controls for the Restricted Property are described in Exhibits F attached hereto and made a part hereof.

5. TCEQ Authority. TCEQ derives its authority to investigate conditions on the Restricted Property from Texas Health and Safety Code, § 361.002, which enables TCEQ to promulgate "closure and remediation" standards for hazardous waste sites to safeguard the health, welfare and physical property of the people of the State and to protect the environment by controlling the management of solid waste. In addition, pursuant to the Texas Water Code, §§ 5.012 and 5.013, Texas Water Code, Annotated, Chapter 5, TCEQ is given primary responsibility for implementing the laws of the State of Texas relating to water and to adopt any rules necessary to carry out its powers and duties under the Texas Water Code. In accordance with this authority, TCEQ requires certain persons to provide certification and/or recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation.

6. Effect of Deed Restrictions. These Deed Restrictions do not constitute a representation or warranty by EPA nor TCEQ of the suitability of this land for any purpose, nor do they constitute any guarantee by EPA or TCEQ that the remediation standards specified herein have been met by the Brio Site Task Force.

7. Restrictions on Use. Contaminants and waste deposited hereon have been remediated to meet nonresidential (i.e., industrial/commercial) soil criteria in accordance with a plan designed to meet the requirements of the 1998 ROD; 30 Texas Administrative Code §335.561 (Risk Reduction Standard Number 3), which mandates that the remedy be designed to eliminate or reduce, to the maximum extent practicable, substantial present or future risk. The remediation plan requires continued post-closure care or engineering and institutional control measures in accordance with the risk reduction standards applicable at the time of this filing. Future use of the Restricted Property is limited as described in Exhibit F. Institutional or legal controls placed on the Restricted Property to ensure appropriate future use include the Lowe Consent Decree and these Deed Restrictions. The current or future owner must undertake actions as necessary to protect human health or the environment in accordance with the statutory authority of EPA and TCEQ.

8. Additional Information. The current owner of the Restricted Property is Ralph Lawrence Lowe, Jr. and the address, where more specific information may be obtained is set forth in Section 3 above.

9. Provisions to Run with the Land. These Deed Restrictions set forth rights, liabilities, agreements, and obligations upon and subject to which the Restricted Property, or any portion thereof, shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, or conveyed. The rights, liabilities, agreements, and obligations herein set forth shall run with

the Restricted Property, as applicable thereto, and any portion thereof, and shall inure to the benefit of the Grantee and EPA, as third party beneficiary, and their successors and be binding upon Grantor and all parties claiming by, through or under Grantor. The rights hereby granted to the Grantee, and its successors and assigns, include the right of Grantee and EPA, as third party beneficiary, to enforce these Deed Restrictions.

10. Grantor Concurrence. Grantor and all parties claiming by, through, or under Grantor covenant and agree with the provisions herein set forth and agree for and among themselves and any party claiming by, through or under them, and their respective agents, contractors, subcontractors and employees, that the Deed Restrictions herein established shall be adhered to and not violated and that their respective interests in the Restricted Property shall be subject to the provisions herein set forth.

11. Incorporation into Deeds, Mortgages, Leases and Instruments of Transfer. Grantor hereby agrees to incorporate this Deed Restriction fully or by reference, into all deeds, easements, mortgages, deeds of trust, leases, licenses, occupancy agreements or any other instrument of transfer by which an interest in and/or a right to use the Restricted Property, or any portion thereof, is conveyed. Any transfer of the Restricted Property, or any portion thereof, shall take place only if the grantee agrees, as a part of the agreement to purchase or otherwise obtain an interest in the Property, that it will comply with the obligations of the Grantor to provide access and/or institutional controls, as set forth in these Deed Restrictions, with respect to such Restricted Property.

12. Severability. If any court or other tribunal determines that any provision of these Deed Restrictions is invalid or unenforceable, such provision shall be deemed to have been modified automatically to conform to the requirements for validity and enforceability as determined by such court or tribunal. In the event the provision invalidated is of such a nature that it cannot be so modified, the provision shall be deemed deleted from these Deed Restrictions as though it had never been included herein. In either case, the remaining provisions of these Deed Restrictions shall remain in full force and effect.

13. Governing Law. It is expressly agreed that the law of the State of Texas is the law governing these Deed Restrictions and any disputes regarding its contents and interpretation.

14. Binding Effect. The covenants, terms, conditions, and restrictions of these Deed Restrictions shall be binding upon the Grantor and his personal representatives, heirs, successors, and assigns, and shall continue as a servitude running into perpetuity with the Restricted Property.

15. Captions. The captions in this instrument have been inserted solely for convenience of reference and are not part of this instrument and shall have no effect upon construction or interpretation.

16. Notices. Any notice required hereunder shall be in writing and shall be delivered by hand, reputable overnight carrier, or certified mail, return receipt requested as follows:

To Grantor:

Ralph Lawrence Lowe, Jr.
3009 Green Tee
Pearland, Texas 77581

To Grantee:

UMB, N.A., as Trustee for the Brio Site Trust
Corporate Trust Division
Attn: Robert Clasquin
2 South Broadway, Suite 435
St. Louis, MO 63102-1713

with a copy to:

Baker Botts L.L.P.
Attn: Aileen Hooks
98 San Jacinto Blvd., Suite 1500
Austin, Texas 78701-4039

To EPA:

Office of Regional Counsel
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202-2733

All notices shall be deemed effective three (3) business days after delivery by the means set forth above. Grantor, Grantee or EPA (or any of their respective successors) may change its address for by written notice to the others (or their respective successors).

EXECUTED this the 19 day of August, 2005.

RALPH LAWRENCE LOWE, JR.

AGREED:

UMB, N.A., as Trustee for the Brio Site Trust
in its fiduciary and not in its individual capacity

By:

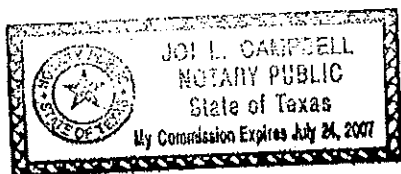
Name: Robert Clasquin
Title: Vice President

STATE OF TEXAS

COUNTY OF Brazoria

BEFORE ME, on this the 19th day of August, 2005, personally appeared **Ralph Lawrence Lowe, Jr.** whose name is subscribed to the foregoing instrument; and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19th day of August, 2005.



Joi L. Campbell
Notary Public in and for the State of Texas

EXHIBIT A

DESCRIPTION OF RESTRICTED PROPERTY

The legal description of the restricted property, described in five tracts, is presented on the next eight pages.

TRACT 1 of 5

A TRACT OR PARCEL OF LAND CONTAINING 1.196 ACRES OF LAND, MORE OR LESS, OUT OF THE LOWE CALLED 20.00 ACRE TRACT OUT OF LOT 71 OF HOIDALE AND COFFMAN SUBDIVISION OF THE PERRY AND AUSTIN LEAGUE, AN ADDITION IN HARRIS COUNTY, TEXAS, ACCORDING TO THE MAP OR PLAT THEREOF. DH

Commencing at the North corner of Lot 71, said point lying in the centerline of Choate Road, 60 foot right of way; THENCE S45°00'00"E, along the Northeast line of Lot 71, a distance of 660 feet to the common lot corners of Lots 74, 75, the Southeast 1/2 of Lot 71, and the Northwest 1/2 of Lot 71; THENCE S45°00'00"W, along the Southeast line of the Northwest 1/2 of Lot 71, 100.00 feet to the place of beginning of the tract hereinafter described; THENCE from said beginning corner S45°00'00"W, along the Northwest line of the Southeast 1/2 of Lot 71, a distance of 455.35 feet to a point for corner; THENCE S45°00'00"E, parallel to the Northeast line of Lot 71, a distance of 115.93 feet to a point for corner in an existing fence line; THENCE along said existing fence line N44°39'06"E, 210.78 feet and N44°31'58"E, 244.58 feet to a point for corner; THENCE N45°W, parallel to the Northeast line of Lot 71, a distance of 112.65 feet to the place of beginning and containing 1.19600 acres (52,098 square feet), more or less.

TRACT 2 of 5

Being a tract or parcel of land containing 3.1332 acres (138,484 square feet), located in the W.D.C Hall League, Abstract No. 23, Harris County, Texas, and being out of a called 4.7409 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under Harris County Clerks File (HCCF) No. X271411 of the Official Public Records of Real Property, Harris County, Texas (OPRRPHCT). Said 3.1332 acre tract being more particularly described as follows:

Bearings shown hereon are based upon the Texas State Plane Coordinate System, South Central Zone and are based upon the 1968 USC&GS adjustment of the North American Datum of 1927. Based upon City of Houston Monument 5850-0802.

COMMENCING at a five-eighths inch iron rod with TxDot Aluminum cap, found at the southerly end of the existing cutback at the southwest corner of Dixie Farm Road (width varies) and Beamer Road (100 feet wide) as recorded under HCCF No. X968559 (Parcel 9) of the OPRRPHCT;

THENCE, South 40° 23' 53" West, along the existing northwesterly right-of-way (easement) line of Dixie Farm Road a distance of 318.14 feet to a five-eighths inch iron rod with TxDot Aluminum cap, found on the southwesterly line of said 4.7409 acre tract;

THENCE, North 48° 31' 03" West, departing the existing northwesterly right-of-way line of Dixie Farm Road along the southwesterly property line of said 4.7409 acre tract a distance of 23.86 feet to the intersection with a six foot chain link fence and POINT OF BEGINNING of the herein described tract;

THENCE, North 48° 31' 03" West, continuing along said southwesterly property line of the 4.7409 acre tract a distance of 542.39 feet to a point for the southwesterly corner of the 4.7409 acre tract and the southeasterly corner of a called 3.0 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271411 of the OPRRPHCT;

THENCE, North 41° 28' 57" East, along the common property line of said 4.7409 acre tract and said 3.0 acre tract a distance of 251.92 feet to the intersection with a six foot chain link fence;

THENCE, South 87° 32' 13" East, along said six foot chain link fence a distance of 59.10 feet to an angle point;

THENCE, South 75° 26' 06" East, continuing along said six foot chain link fence a distance of 32.23 feet to an angle point;

THENCE, South 48° 49' 40" East, continuing along said six foot chain link fence a distance of 191.49 feet to an angle point;

THENCE, South 40° 57' 43" East, continuing along said six foot chain link fence a distance of 32.44 feet to an angle point;

BRIO SUPERFUND SITE
3.1332 ACRES
W.D.C. HALL LEAGUE A-23
PAGE 2 OF 2

THENCE, South 27° 28' 33" East, continuing along said six foot chain link fence a distance of 60.66 feet to an angle point;

THENCE, South 06° 36' 50" East, continuing along said six foot chain link fence a distance of 59.61 feet to an angle point;

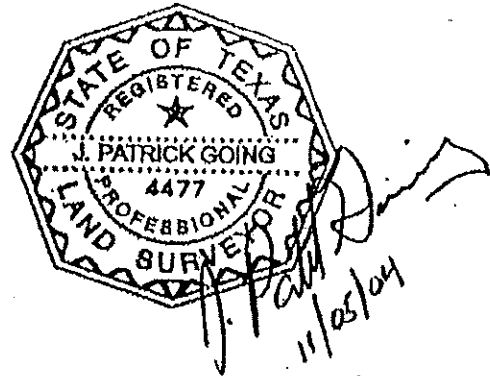
THENCE, South 01° 18' 14" West, continuing along said six foot chain link fence a distance of 96.73 feet to an angle point;

THENCE, South 11° 23' 57" West, continuing along said six foot chain link fence a distance of 63.46 feet to an angle point;

THENCE, South 17° 33' 33" West, continuing along said six foot chain link fence a distance of 120.46 feet to the POINT OF BEGINNING and containing 3.1332 acres (136,484 square feet) of land.

This description is based upon a survey performed by J. Patrick Going, Registered Professional Land Surveyor, Texas Registration Number 4477, completed November 05, 2004, and is on file in the office of Baseline Corporation, Houston, Texas, Job No. 85.044.34.

November 5, 2004
CKT:bgb
Job No. 85.044.34
File No. 8504434WPM&B-DES-3-1332 ACRES

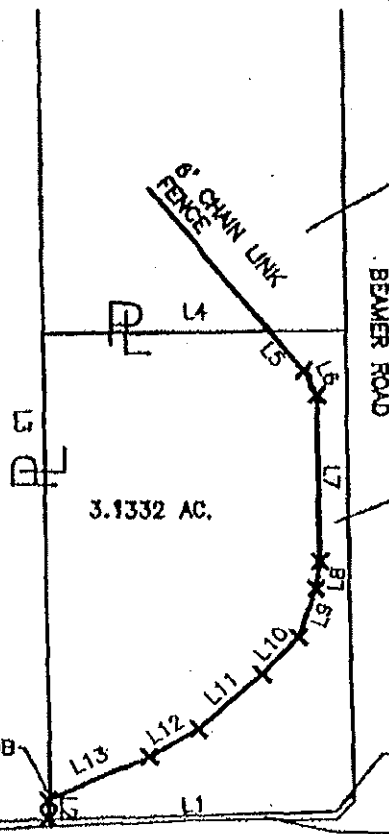


LINE	DISTANCE	BEARING
L1	318.14'	S 40°23'53" W
L2	23.88'	N 48°31'03" W
L3	542.39'	N 48°31'03" W
L4	251.92'	N 41°28'57" E
L5	59.10'	S 87°32'13" E
L6	32.23'	S 75°28'06" E
L7	191.49'	S 48°49'40" E
L8	32.44'	S 40°57'43" E
L9	60.66'	S 27°28'33" E
L10	59.61'	S 06°36'50" E
L11	96.73'	S 01°16'14" W
L12	63.46'	S 11°23'57" W
L13	120.46'	S 17°33'33" W

W.D.C. HALL LEAGUE ABSTRACT 23

0 200 400 Feet

CALLLED 48.7149 ACRE TRACT
TRACT 2
ABILENE NATIONAL BANK AND
OREGONE WEST, INC.
TO
BRIO REFINING, INC.
EXECUTED FEBRUARY 1, 1984
HCCF NO. J358799 OPRRPHCT



CALLLED 3.0 ACRE TRACT
MARJORIE MARTHA LOWE, et al
TO
RALPH LAWRENCE LOWE, JR.
EXECUTED DECEMBER 18, 2003
HCCF NO. X271411 OPRRPHCT

CALLLED 4.7409 ACRE TRACT
MARJORIE MARTHA LOWE, et al
TO
RALPH LAWRENCE LOWE, JR.
EXECUTED DECEMBER 18, 2003
HCCF NO. X271411 OPRRPHCT

ROAD EASEMENT (PARCEL 6)
HCCF NO. X715903 OPRRPHCT
EXISTING ROW

POC
FND. 5/8" IR W/TXDOT CAP

ROAD EASEMENT (PARCEL 9)
HCCF NO. X968559 OPRRPHCT

DIXIE FARM ROAD

PROPOSED ROW

NOTES

- 1) BEARINGS SHOWN HEREON ARE BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE AND ARE BASED UPON THE 1988 USC&GS ADJUSTMENT OF THE NORTH AMERICAN DATUM OF 1927, BASED UPON CITY OF HOUSTON MONUMENT 5850-0802.
- 2) A METES AND BOUNDS DESCRIPTION BASED UPON A SURVEY PERFORMED BY J. PATRICK GOING, REGISTERED PROFESSIONAL LAND SURVEYOR, TEXAS REGISTRATION NUMBER 4477, COMPLETED NOVEMBER 5, 2004, AND IS ON FILE IN THE OFFICE OF BASELINE CORPORATION, HOUSTON, TEXAS.
JOB NUMBER 85.044.34

EXHIBIT

3.1332 ACRES
136,484 SQ. FT.

BEING OUT OF
A CALLLED 4.7409 ACRE TRACT
IN THE
W.D.C. HALL LEAGUE, A-23
HARRIS COUNTY, TEXAS

BASELINE CORPORATION PROFESSIONAL SURVEYORS	
1708 BEAUMONT DRIVE, SUITE 200, HOUSTON, TEXAS 77008 PHONE (713) 666-0166 FAX (713) 666-1542	
Scale : 1" = 200'	Job No. : 85.044.34
Date : 11/11/2004	FB No. : X-405
Drawn by : CKT	Approved by : JPO

TRACT 3 of 5

Being a tract or parcel of land containing 0.8522 of one acre (37,121 square feet), located in the W.D.C Hall League, Abstract No. 23, Harris County, Texas, and being out of a called 3.0 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under Harris County Clerks File (HCCF) No. X271411 of the Official Public Records of Real Property, Harris County, Texas (OPRRPHCT). Said 0.8522 of one acre being more particularly described as follows:

Bearings shown hereon are based upon the Texas State Plane Coordinate System, South Central Zone and are based upon the 1968 USC&GS adjustment of the North American Datum of 1927. Based upon City of Houston Monument 5850-0802.

COMMENCING at a five-eighths inch iron rod with TxDot Aluminum cap, found at the southerly end of the existing cutback at the southwest corner of Dixie Farm Road (width varies) and Beamer Road (100 feet wide) as recorded under HCCF No. X966559 (Parcel 9) of the OPRRPHCT;

THENCE, South 40° 23' 53" West, along the existing northwesterly right-of-way (easement) line of Dixie Farm Road a distance of 318.14 feet to a five-eighths inch iron rod with TxDot Aluminum cap, found on the southwesterly line of a called 4.7409 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271411 of the OPRRPHCT;

THENCE, North 48° 31' 03" West, departing the existing northwesterly right-of-way line of Dixie Farm Road along the southwesterly property line of said 4.7409 acre tract a distance of 568.25 feet to the southwesterly corner of said 4.7409 acre tract and the southeasterly corner of said 3.0 acre tract and POINT OF BEGINNING of the herein described tract;

THENCE, North 48° 31' 03" West, along the southwesterly property line of said 3.0 acre tract a distance of 292.94 feet to the intersection with a six foot chain link fence;

THENCE, South 86° 39' 01" East, along said six foot chain link fence a distance of 138.27 feet to an angle point;

THENCE, North 72° 29' 50" East, continuing along said six foot chain link fence a distance of 39.34 feet to an angle point;

THENCE, South 87° 32' 13" East, continuing along said six foot chain link fence a distance of 210.97 feet to the intersection with the common property line of said 3.0 acre tract and said 4.7409 acre tract;

THENCE, South 41° 28' 57" West, along said common property line of the 3.0 acre tract and the 4.7409 acre tract a distance of 251.92 feet to the POINT OF BEGINNING and containing 0.8522 of one acre (37,121 square feet) of land.

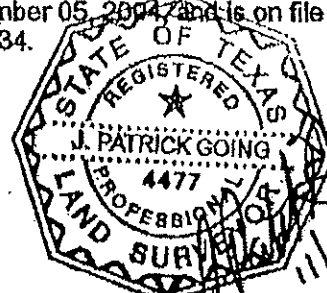
This description is based upon a survey performed by J. Patrick Going, Registered Professional Land Surveyor, Texas Registration Number 4477, completed November 05, 2004 and is on file in the office of Baseline Corporation, Houston, Texas, Job No. 85.044.34.

November 5, 2004

CKT:bgb

Job No. 85.044.34

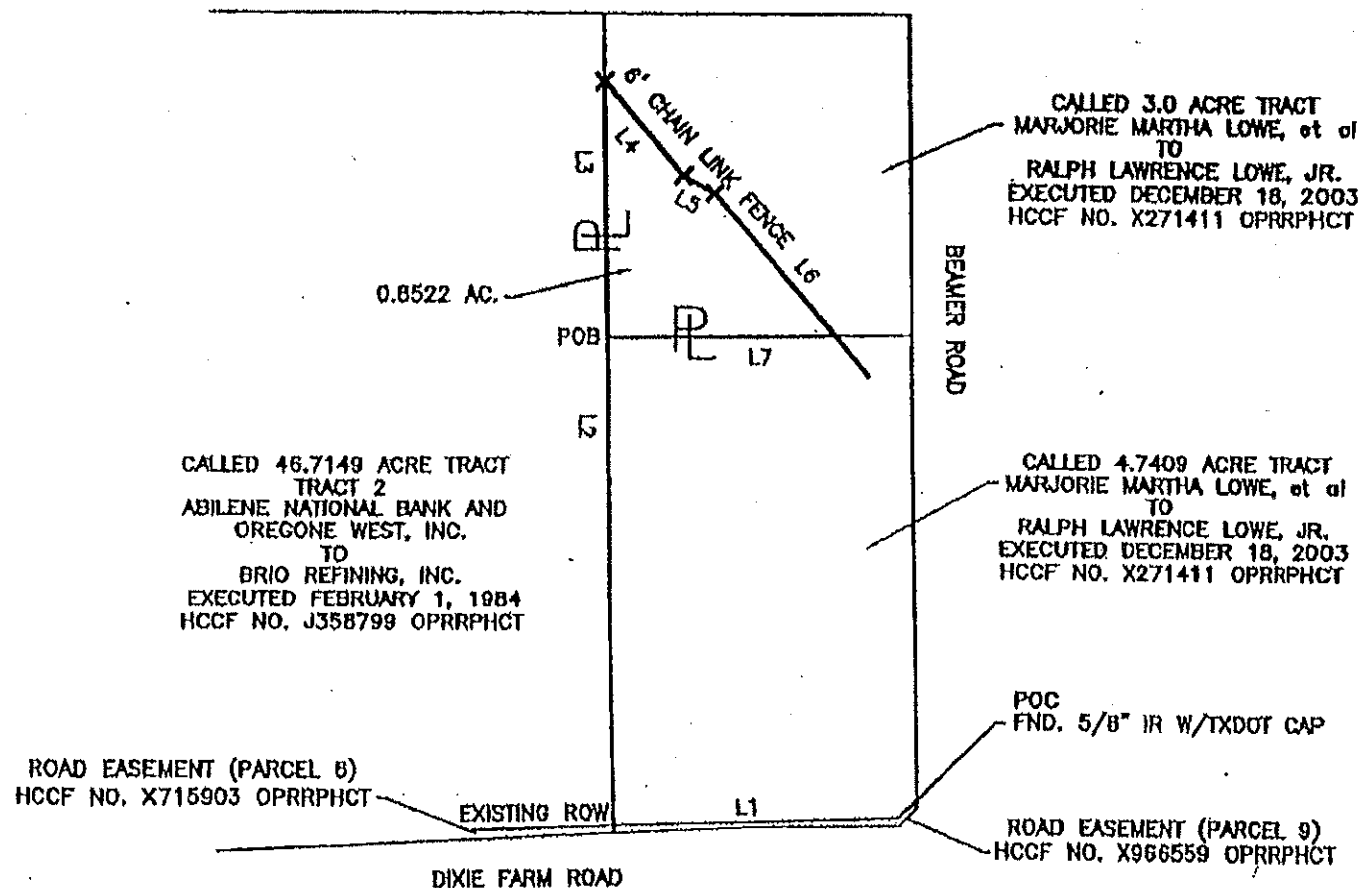
File No. 8504434WPM&B-DES-0-8522 ACRES



LINE	DISTANCE	BEARING
L1	318.14'	S 40°23'53" W
L2	568.25'	N 48°31'03" W
L3	292.94'	N 48°31'03" W
L4	138.27'	S 88°39'01" E
L5	39.34'	N 72°29'50" E
L6	210.97'	S 87°32'13" E
L7	251.92'	S 41°28'57" W

W.D.C. HALL LEAGUE ABSTRACT 23

0 200 400 Feet



NOTES

- 1) BEARINGS SHOWN HEREON ARE BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE AND ARE BASED UPON THE 1988 USC&GS ADJUSTMENT OF THE NORTH AMERICAN DATUM OF 1927. BASED UPON CITY OF HOUSTON MONUMENT 5850-0802.
- 2) A METES AND BOUNDS DESCRIPTION BASED UPON A SURVEY PERFORMED BY J. PATRICK GOING, REGISTERED PROFESSIONAL LAND SURVEYOR, TEXAS REGISTRATION NUMBER 4477, COMPLETED NOVEMBER 5, 2004, AND IS ON FILE IN THE OFFICE OF BASELINE CORPORATION, HOUSTON, TEXAS. JOB NUMBER 85.044.34

EXHIBIT

0.8522 OF ONE ACRE
37,121 SQ. FT.

BEING OUT OF
A CALLED 3.0 ACRE TRACT
IN THE

W.D.C. HALL LEAGUE, A-23
HARRIS COUNTY, TEXAS

BASELINE CORPORATION PROFESSIONAL SURVEYORS 1708 WEAVER STREET, SUITE 200, HOUSTON, TEXAS 77008 PHONE (713) 866-0110 FAX (713) 866-1841	
Scale : 1" = 200'	Job No. : 85.044.34
Date : 11/11/2004	FB No. : X-408
Drawn by : CKT	Approved by : JPG

TRACT 4 OF 5

FIELD NOTES
Of A Survey Of

A tract or parcel of land containing 0.278 acres of land, more or less, out of the Lowe called 20.00 acre tract, out of Lot 71 of Holdale & Coffman Subdivision of the Perry and Austin League, an addition in Harris County, Texas, according to the map or plat thereof, recorded in Volume 3, Page 6, of the Map Records of Harris County, Texas, and being more particularly described by notes and bounds as follows:

BEGINNING at a ½ inch iron rod found for the most Westerly corner of the said Lowe called 20.00 acre tract;

(E)

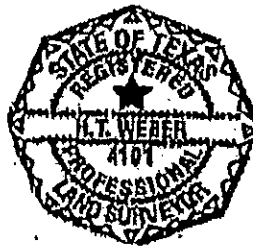
THENCE North 42 deg 05 min 11 sec East, a distance of 104.65 feet to a ½ inch iron rod found for corner;

(A)

THENCE South 47 deg 54 min 49 sec East, a distance of 115.93 feet to a ½ inch iron rod found for corner;

THENCE South 41 deg 44 min 17 sec West, a distance of 103.67 feet to a ½ inch iron rod set for corner;

THENCE North 48 deg 23 min 54 sec West, a distance of 116.56 feet to the POINT OF BEGINNING of the herein described tract of land and containing 0.278 acres of land, more or less.



H.T. Weber

TRACT 5 OF 5

FIELD NOTES
Of A Survey Of

A tract or parcel of land containing 0.754 acres of land, more or less, out of the Lowe called 20.00 acre tract, out of Lot 71 and 74 of Holdale & Coffman Subdivision of the Perry and Austin League, an addition in Harris County, Texas, according to the map or plat thereof, recorded in Volume 3, Page 6, of the Map Records of Harris County, Texas, and being more particularly described by metes and bounds as follows:

COMMENCING at a 5/8 inch iron rod found for the most Northerly corner of the said Lowe called 20.00 acre tract, said point being in the Southwesterly right-of-way line of Beamer Road (variable width);

THENCE South 42 deg 05 min 11 sec West, a distance of 427.08 feet to a 1/2 inch iron rod set for the POINT OF BEGINNING of the herein described tract;

THENCE South 56 deg 59 min 32 sec East, a distance of 100.08 feet to a fence post for corner;

THENCE South 39 deg 35 min 50 sec West, a distance of 318.33 feet to a 1/2 inch iron rod set for corner;

(D) THENCE North 47 deg 54 min 45 sec West, a distance of 112.65 feet to a 1/2 inch iron rod found for corner;

THENCE North 42 deg 05 min 11 sec East, a distance of 302.33 feet to the POINT OF BEGINNING of the herein described tract of land and containing 0.754 acres of land, more or less.



H.T. Werber

875-05-1230

HOLD FOR TEXAS AMERICAN TITLE COMPANY

DEED NOTICE

08/30/05 Y730708 200944470

\$46.00

STATE OF TEXAS §
HARRIS COUNTY §

KNOW ALL BY THESE PRESENTS THAT:

This Deed Notice is hereby filed in the Deed Records of Harris County, Texas to provide information concerning certain environmental conditions and/or use limitations affecting the property of **Brio Refining, Inc., formerly known as Friendswood Refining Corp., and/or the unknown shareholders of Brio Refining, Inc. (the "Record Owner")** in accordance with the Record of Decision ("ROD") issued by the Environmental Protection Agency on March 31, 1988; the Administrative Order on Consent, Docket No. CERCLA VI-13-88, between the Environmental Protection Agency, Region VI, and Brio Refining, Inc., entered in 1988; the Brio Site Consent Decree between the United States and AMOCO Chemical Co, et al., entered on April 4, 1991; the Amended ROD issued by the Environmental Protection Agency on July 2, 1997; and the Brio Refining Site Amended Consent Decree between the United States and AMOCO Chemical Co., et al., entered on March 8, 1999 ("Amended Consent Decree"); and in compliance with the recordation requirements:

I.

This Deed Notice affects the real property described in Exhibit A, attached hereto and made a part hereof (the "Affected Property"). The Affected Property is part of the real property known as the Brio Refining Superfund Site (the "Site"), which is described in Exhibit B attached hereto and made a part hereof.

The Brio Site Task Force (the "BSTF"), consisting of the Settlers to the Amended Consent Decree or their successors-in-interest as described in Exhibit C and made part of this filing, has performed a remediation of the Site, located at 2501 Dixie Farm Road in southern Harris County, Texas, including remediation on the Affected Property. Information about the known waste constituents that have been left in place is provided in Exhibit D attached hereto and made a part hereof. Further information concerning this matter may be found by an examination of the EPA's Brio Refining Superfund Site Administrative Record at EPA Region 6, 1445 Ross Avenue, Dallas, Texas, 75202, and at the San Jacinto College-South Campus, 13735 Beamer Rd., Houston, Texas, 77089.

The United States Environmental Protection Agency ("EPA") derives its authority to protect the environment and to review the remediation of this Site from Section 101, *et seq.*, of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. § 9601, *et seq.*, and 40 C.F.R. Part 300. In accordance with this authority, EPA requires the owner of the Affected Property, to provide the United States and its representatives access to the Site for the purposes of conducting any activity related to the 1988 ROD. The 1988 ROD recognized that permanent site control, including the imposition of necessary deed notices and restrictions (if possible) and restriction of access to the Site, would be

necessary. The 1997 ROD also required long term, effective site control. Effective site controls for the Brio Site, including the Affected Property, are described in Exhibit D and made a part of this filing.

TCEQ derives its authority to investigate conditions on this Affected Property from Texas Health and Safety Code, § 361.002, which enables TCEQ to promulgate "closure and remediation" standards for hazardous waste sites to safeguard the health, welfare and physical property of the people of the State and to protect the environment by controlling the management of solid waste. In addition, pursuant to the Texas Water Code, §§ 5.012 and 5.013, Texas Water Code, Annotated, Chapter 5, TCEQ is given primary responsibility for implementing the laws of the State of Texas relating to water and to adopt any rules necessary to carry out its powers and duties under the Texas Water Code. In accordance with this authority, TCEQ requires certain persons to provide certification and/or recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation.

This Deed Notice is not a representation or warranty by EPA nor TCEQ of the suitability of this land for any purpose, nor does it constitute any guarantee by EPA or TCEQ that the remediation standards specified herein have been met by the Brio Site Task Force.

II.

Site Cleanup: Contaminants and waste deposited hereon have been remediated to meet nonresidential (i.e., industrial/commercial) soil criteria in accordance with a plan designed to meet the requirements of the 1997 ROD; 30 Texas Administrative Code §335.561 (Risk Reduction Standard Number 3), which mandates that the remedy be designed to eliminate or reduce, to the maximum extent practicable, substantial present or future risk. The remediation plan requires continued post-closure care or engineering and institutional control measures in accordance with the risk reduction standards applicable at the time of this filing. The Brio Site Task Force will continue to monitor the Site, including the groundwater, according to the procedures and schedule set forth in the February 2004 Maintenance, Operations and Monitoring Plan. Future use of the Affected Property is limited to restricted access, controlled by a fence or similar barrier. Institutional or legal controls placed on the Affected Property and the site to ensure appropriate future use include the Administrative Order on Consent (relating to site access and control), Docket No. CERCLA VI-13-88, between the Environmental Protection Agency, Region VI, and Brio Refining, Inc. entered in 1988, and deed restriction or deed notice prohibiting the uses listed in Exhibit D.

The current or future owner must undertake actions as necessary to protect human health or the environment in accordance with the statutory authority of EPA and TCEQ.

III.

Record Owner is the owner of record of the tracts described in Exhibit A, and the address where more specific information may be obtained, is set forth in Section I above.

IV.

This Deed Notice may be rendered of no further force or effect only by a superseding deed notice executed by the EPA or the United States Department of Justice and the TCEQ or their respective successor agencies and filed in the same Real Property Records as those in which this Deed Notice is filed.

EXECUTED this the 23 day of August, 2005.

BRIO SITE TASK FORCE

By: Michael L. House
Name: Michael L. House
Title: Project Manager, Brio Site Task Force

STATE OF Missouri §
COUNTY OF St. Charles §

This instrument was acknowledged before me on August ^{23rd}, 2005 by Michael L. House, as Project Manager of the Brio Site Task Force, on behalf of said task force.

Joani M. Madden
Notary Public in and for the State of Missouri
My Commission Expires: 6/29/08

JOANI M. MADDEN
Notary Public - State of Missouri
County of St. Charles
My Commission Expires Jun. 29, 2008

EXHIBIT A

AFFECTED PROPERTY

THE FOLLOWING DESCRIBED FOUR TRACTS:

TRACT 1

DESCRIPTION OF A TRACT OUT OF THE NORTHWEST ONE-HALF OF LOT 71, OF A SUBDIVISION OF 2069 ACRES OF LAND OUT OF THE PERRY AND AUSTIN LEAGUE AND THE THOMAS LABOR, HARRIS COUNTY, TEXAS

ACCORDING TO THE MAP OR PLAT RECORDED IN VOLUME 3, PAGE 6, OF THE MAP RECORDS OF TRAVIS COUNTY, TEXAS

TRACT NO. 1 DESCRIPTION: Commencing at the North corner of Lot 71, said point lying in the centerline of Choate Road, 60 foot right of way; THENCE S45°E, along the Northeast line of Lot 71, a distance of 30 feet to the Southeast right of way line of Choate Road; THENCE S45°00'00"W, along the Southeast right of way line of Choate Road, a distance of 100.00 feet to the place of beginning of the tract hereinafter described; THENCE from said beginning corner S45°00'00"E, parallel to the Northeast line of Lot 71, a distance of 630.00 feet to a point for corner in the Southeast line of the Northwest one-half of Lot 71; THENCE S45°00'00"W, along the Southeast line of the Northwest 1/2 of Lot 71, a distance of 455.35 feet to a point for corner; THENCE N41°34'10"W, a distance of 70.00 feet to a point for corner; THENCE S48°25'50"W, a distance of 17.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 35.00 feet to a point for corner; THENCE N48°25'50"E, a distance of 3.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 6.00 feet to a point for corner; THENCE N48°25'50"E, a distance of 14.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 156.46 feet to a point for corner; THENCE S48°25'50"W, a distance of 79.73 feet to a point for corner; THENCE N40°39'10"W, a distance of 50.53 feet to a point for corner; THENCE S45°12'50"W, a distance of 44.89 feet to a point for corner in the Southwest line of Lot 71; THENCE N45°00'00"W, along the Southwest line of Lot 71, a distance of 337.70 feet to a point for corner in the Southeast right of way line of Choate Road; THENCE N45°00'00"E, along the Southeast right of way line of Choate Road, 560.00 feet to the place of beginning and containing 7.36573 acres, (320,851 Sq. feet), more or less.

TRACT 2

DESCRIPTION OF PART OF LOTS 48, 49, 50, 51, 52 AND 53, GEORGE W. JENKINS SUBDIVISION, W.D.C. HALL LEAGUE, HARRIS COUNTY, TEXAS

TRACT NO. 2 DESCRIPTION: Commencing at the West corner of Lot 54; THENCE N45°E, along the Northwest line of Lots 54 and 53 and along the Southeast line of a 30 Foot County Road, a distance of 553.96 feet to the place of beginning of the tract hereinafter described; THENCE from said beginning point continuing N45°E, along the Northwest line of Lots 53, 52, 51, 49 and 48 and along the Southeast line of a 30 Foot County Road, a distance of 2235.09 feet to a point for corner; THENCE S45°00'00"E parallel to the Northeast line of Lot 48,

a distance of 386.34 feet to a point for corner; THENCE N45°00'00"E, parallel to the Northwest line of Lot 48, a distance of 338.25 feet to a point for corner in the Southwest right of way line of Beamer Road; THENCE S45°00'00"E parallel to the Northeast line of Lot 48 and along the Southwest right of way line of Beamer Road, a distance of 610.53 feet to a point for corner being the point of intersection of the Southwest right of way line of Beamer Road with the Northwest right of way line of Choate Road; THENCE S45°00'00"W, along the Northwest right of way line of Choate Road and parallel to the Southeast line of Lots 48, 49, 50, 51 and 52, at a distance of 592.1 feet cross the common line between Lots 48 and 49, in all, a distance of 1895.2 feet to a point for corner; THENCE in a Westerly direction across Lots 52 and 53 along the centerline of a Drainage Easement from Hard-Lowe Chemical Company to the City of Houston, as per record in Volume 6597, Page 245 of the Deed Records of Harris County, Texas, to the place of beginning and containing 46.7149 acres, more or less.

SAVE AND EXCEPT FROM ABOVE DESCRIBED TRACT NUMBER 2, THE FOLLOWING 4.7409 ACRE TRACT:

DESCRIPTION OF A 4.7409 ACRE TRACT:

Commencing at the North corner of Lot 48; THENCE S45°00'00"W, along the Northwest line of Lot 48, a distance of 10 feet to a point in the Southwest right of way line of Hall Road; THENCE S45°00'00"E, along the Southwest right of way line of Hall Road and parallel to the Northeast line of Lot 48, being 10 feet perpendicular Southwest therefrom, a distance of 386.34 feet to the place of beginning of the tract hereinafter described: THENCE from said beginning point continuing S45°00'00"E, along the Southwest right of way line of Hall Road and parallel to the Northeast line of Lot 48, being 10 feet perpendicular Southwest therefrom, a distance of 610.53 feet to a point for corner in the Northwest right of way line of Dixie Farm Road; THENCE S45°00'00"W, along the Northwest right of way line of Dixie Farm Road and parallel to the Southeast line of Lot 48 being 30 feet perpendicular Northwest therefrom, a distance of 338.25 feet to a point for corner; THENCE N45°00'00"W, parallel to the Northeast line of Lot 48, a distance of 610.53 feet to a point for corner; THENCE N45°00'00"E, parallel to the Northwest line of Lot 48, a distance of 338.25 feet to the place of beginning and containing 4.7409 acres, more or less.

TRACT 3

DESCRIPTION OF A TRACT OUT OF LOT 67, OF A SUBDIVISION OF 2069 ACRES OF LAND OUT OF THE PERRY AND AUSTIN LEAGUE AND THE THOMAS LABOR, HARRIS COUNTY, TEXAS

TRACT NO. 3 DESCRIPTION: Commencing at the North corner of Lot 67, said point lying in the centerline of Choate Road, 60 foot right of way; THENCE S45°00'00"E, along the Northeast line of Lot 67, a distance of 56.00 feet to the place of beginning of the tract hereinafter described, said beginning point also lying in the Southeast right of way line of Choate Road, 60 foot right of way; THENCE from said beginning corner S45°00'00"W, along the Southeast right of way line of Choate Road, a distance of 61.73 feet to a point for corner; THENCE S45°00'00"E, a distance of 281.47 feet to a point for corner; THENCE N45°12'50"E, a distance of 61.73 feet to a point for corner in the Northeast line of Lot 67, THENCE N45°00'00"W, along

the Northeast line of Lot 67, a distance of 281.70 feet to the place of beginning, containing 0.39904 acre, (17,382 square feet) more or less.

TRACT 4

SURVEY OF A TRACT OUT OF THE NORTHWEST ONE-HALF OF LOT 71, OF A SUBDIVISION OF 2069 ACRES OF LAND OUT OF THE PERRY AND AUSTIN LEAGUE AND THE THOMAS LABOR, HARRIS COUNTY, TEXAS

According to the map or plat recorded in Volume 3, Page 6, of the Map Records of Harris County, Texas.

TRACT NO. 4 DESCRIPTION: Commencing at the North corner of Lot 71, said point lying in the centerline of Dixie Farm Road, 60 foot right of way; THENCE S45°E, along the Northeast line of Lot 71, a distance of 30 feet to the place of beginning of the tract hereinafter described: THENCE from said beginning corner S45°00'00"E, along the Northeast line of Lot 71, a distance of 630.00 feet to a point for corner being the East corner of the Northwest one-half of Lot 71; THENCE S45°00'00"W, along the Southeast line of the Northwest 1/2 of Lot 71, a distance of 100.00 feet to a point for corner; THENCE N45°00'00"W, parallel to the Northeast line of Lot 71, a distance of 630.00 feet to a point for corner in the Southeast right of way line of Dixie Farm Road; THENCE N45°00'00"E, along the Southeast right of way line of Dixie Farm Road, 100.00 feet to the place of beginning and containing 1.4463 acres, (63,000 square feet), more or less.

* * * * *

Exhibit A

100-5-1047

EXHIBIT B

DESCRIPTION OF SITE

The legal description of the Site, described in two tracts, is presented on the next seven pages.

HP 010-73-1040

Exhibit B

BRIO SUPERFUND SITE
70.1767 ACRES TRACT 1
W.D.C. HALL LEAGUE A-23
PAGE 1 OF 3

Being a tract or parcel of land containing 70.1767 acres (3,056,899 square feet), located in the W.D.C Hall League, Abstract No. 23, Harris County, Texas, and being out of a called 46.7149 acre tract (tract 2) described in deed executed February 1, 1984 from Abilene National Bank and Oregone West, Inc. to Brio Refining, Inc. recorded under Harris County Clerks File (HCCF) No. J358799 of the Official Public Records of Real Property, Harris County, Texas (OPRRPHCT), a called 34.523 acre tract described in deed executed November 20, 1998 from Beamer Road Management Company to State Street Bank and Trust Company of Missouri, N.A. as Trustee of the Brio Site Trust recorded under HCCF No. T396582 of the OPRRPHCT, a called 4.7409 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271411 of the OPRRPHCT, and a called 3.0 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271411 of the OPRRPHCT. Said 70.1767 acre tract is wholly within a six foot chain link fence and being more particularly described as follows:

Bearings shown hereon are based upon the Texas State Plane Coordinate System, South Central Zone and are Based upon the 1968 USC&GS adjustment of the North American Datum of 1927. Based upon City of Houston Monument 5850-0802.

COMMENCING at a five-eighths inch iron rod with TxDot Aluminum cap, found at the southerly end of the existing cutback at the southwest corner of Dixie Farm Road (width varies) and Beamer Road (100 feet wide) as recorded under HCCF No. X966559 (Parcel 9) of the OPRRPHCT;

THENCE, South 40° 23' 53" West, along the existing northwesterly right-of-way (easement) line of Dixie Farm Road a distance of 320.54 feet to a point being at a right angle to a six foot chain link fence corner;

THENCE, North 49° 36' 07" West, departing the existing northwesterly right-of-way line of Dixie Farm Road at a right angle a distance of 1.16 feet to a six foot chain link fence corner and POINT OF BEGINNING of the herein described tract;

THENCE, along the meanders of said six foot chain link fence the following courses;

North 48° 09' 07" West, 21.74 feet to an angle point;
North 17° 33' 33" East, 122.96 feet to an angle point;
North 11° 23' 57" East, 63.46 feet to an angle point;
North 01° 16' 14" East, 96.73 feet to an angle point;
North 06° 36' 50" West, 59.61 feet to an angle point;
North 27° 28' 33" West, 60.66 feet to an angle point;
North 40° 57' 43" West, 32.44 feet to an angle point;
North 48° 49' 40" West, 191.49 feet to an angle point;
North 75° 26' 06" West, 32.23 feet to an angle point;
North 87° 32' 13" West, 270.07 feet to an angle point;
South 72° 29' 50" West, 39.34 feet to an angle point;
North 86° 39' 01" West, 138.27 feet to an angle point;
North 48° 31' 03" West, 78.40 feet to an angle point;

BRIO SUPERFUND SITE
70.1767 ACRES TRACT 1
W.D.C. HALL LEAGUE A-23
PAGE 2 OF 3

THENCE, North 05° 02' 42" West, departing said six foot chain link fence a distance of 40.90 feet to a point at the southwest corner of a called 2.736 acre tract described in deed executed September 26, 1997, from Southbend Properties, Inc. to Beamer Road Management Company, recorded under HCCF No. S659057 of the OPRRPACT;

THENCE, North 48° 31' 43" West, along the west property line of said called 2.736 acre tract a distance of 382.66 feet to a point at the intersection with said six foot chain link fence;

THENCE, continuing along the meanders of said six foot chain link fence the following courses;

South 42° 05' 04" West, 89.35 feet to an angle point;
North 47° 59' 35" West, 59.34 feet to an angle point;
South 42° 11' 07" West, 310.94 feet to an angle point;
South 48° 25' 54" East, 8.97 feet to an angle point;
South 42° 09' 42" West, 467.35 feet to an angle point;
South 42° 05' 37" West, 297.90 feet to an angle point;
South 37° 21' 04" West, 129.93 feet to an angle point;
South 66° 54' 05" West, 10.01 feet to an angle point;
North 63° 21' 22" West, 268.95 feet to an angle point;
South 26° 36' 11" West, 378.18 feet to an angle point;
South 26° 27' 57" West, 285.79 feet to an angle point;
South 25° 52' 09" West, 208.60 feet to an angle point;
South 22° 42' 10" East, 208.14 feet to an angle point;
South 73° 36' 01" East, 178.41 feet to an angle point;
North 85° 44' 59" East, 108.02 feet to an angle point;
South 23° 38' 01" East, 28.43 feet to an angle point;
South 88° 29' 16" East, 30.47 feet to an angle point;
North 88° 10' 58" East, 69.50 feet to an angle point;
South 81° 15' 09" East, 110.66 feet to an angle point;
South 82° 13' 46" East, 189.90 feet to an angle point;
South 82° 35' 38" East, 159.32 feet to an angle point;
South 82° 20' 16" East, 170.02 feet to an angle point;
South 74° 02' 38" East, 140.18 feet to an angle point;
South 76° 58' 43" East, 128.51 feet to an angle point;
South 87° 38' 56" East, 29.35 feet to an angle point;
South 77° 48' 01" East, 173.77 feet to an angle point;
South 50° 43' 24" East, 8.59 feet to an angle point;
North 41° 56' 08" East, 96.21 feet to an angle point;
North 41° 23' 20" East, 349.10 feet to an angle point;
North 40° 18' 15" East, 338.94 feet to an angle point;
North 39° 00' 49" East, 270.04 feet to an angle point;
North 39° 52' 38" East, 415.21 feet to an angle point;

BRIO SUPERFUND SITE
70.1767 ACRES TRACT 1
W.D.C. HALL LEAGUE A-23
PAGE 3 OF 3

North 40° 26' 43" East, 23.12 feet to the POINT OF BEGINNING and containing 70.1767 acres (3,056,899 square feet) of land.

This description is based upon a survey performed by J. Patrick Going, Registered Professional Land Surveyor, Texas Registration Number 4477, completed November 05, 2004, and is on file in the office of Baseline Corporation, Houston, Texas, Job No. 85.044.34.

REVISED 04/01/05: REMOVED CALL FOR 2.736 ACRE TRACT IN PREAMBLE

REVISED 12/10/04: ADDED CALL FOR 2.736 ACRE TRACT

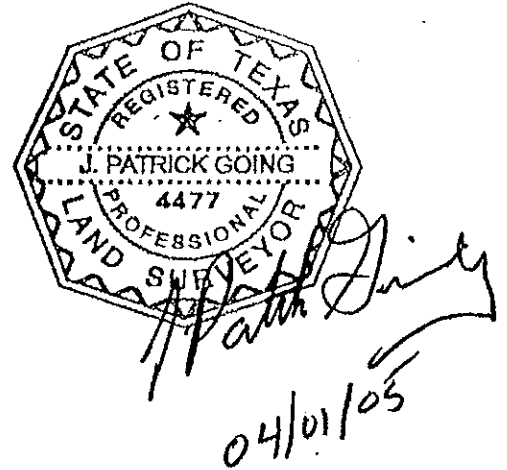
REVISED 11/11/04:

November 5, 2004

Job No. 85.044.34

CKT:bgb

File: BLACAD\8504434\WPM&B-DES-70-1767-ACRES-TRACT-1.DOC



BRIO SUPERFUND SITE
19.7300 ACRES TRACT 2
PERRY AND AUSTIN LEAGUE A-55
PAGE 1 OF 2

Being a tract or parcel of land containing 19.7300 acres (859,441 square feet), located in the Perry and Austin League, Abstract No. 55, Harris County, Texas, and being out of a called 9.099 acre tract described in deed executed May 19, 2002 from First Baptist Church of Dallas to UMB Bank, N.A., Trustee of the Brio Site Trust recorded under Harris County Clerks File (HCCF) No. V822181 of the Official Public Records of Real Property, Harris County, Texas (OPRRPHCT), a called 20 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271408 of the OPRRPHCT, a called 7.36573 acre tract (tract 1) described in deed executed February 1, 1984 from Abilene National Bank and Oregon West, Inc. to Brio Refining, Inc. recorded under HCCF No. J358799 of the OPRRPHCT, a called 0.73352 acre tract (tract 1) described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271409 of the OPRRPHCT, a called 6.55014 acre tract (tract 3) described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271409 of the OPRRPHCT, a called 0.39904 acre tract (tract 4) described in deed executed February 1, 1984 from Abilene National Bank and Oregon West, Inc. to Brio Refining, Inc. recorded under HCCF No. J358799 of the OPRRPHCT, a called 1.4463 acre tract described in deed executed December 18, 1979 from Ralph Lowe to Friendswood Refining Corp. recorded under HCCF No. G389139 of the OPRRPHCT, a called 0.278 acre tract and a called 1.196 acre tract described in deed executed August 30, 1978, recorded under HCCF No. F790654 of the OPRRPHCT, as well as that certain called 0.754 acre tract. Said 19.7300 acre tract is wholly within a six foot chain link fence and being more particularly described as follows:

Bearings shown hereon are based upon the Texas State Plane Coordinate System, South Central Zone and are Based upon the 1988 USC&GS adjustment of the North American Datum of 1927. Based upon City of Houston Monument 5850-0802.

COMMENCING at a three-quarter inch iron rod, found at the intersection of the existing southeasterly right-of-way line of Dixie Farm Road (width varies) and the southwesterly right-of-way line of Beamer Road (width varies);

THENCE, South 42° 05' 00" West, along said existing southeasterly right-of-way line of Dixie Farm Road a distance of 478.27 feet to a point being at a right angle to a six foot chain link fence corner;

THENCE, South 47° 55' 00" East, departing the proposed southeasterly right-of-way line of Dixie Farm Road at a right angle a distance of 23.02 feet to a six foot chain link fence corner and POINT OF BEGINNING of the herein described tract;

THENCE, along the meanders of said six foot chain link fence the following courses;

South 49° 04' 25" East, 181.55 feet to an angle point;
South 48° 51' 56" East, 349.87 feet to an angle point;
South 51° 59' 12" East, 186.08 feet to an angle point;
South 41° 30' 58" West, 178.94 feet to an angle point;
South 41° 39' 01" West, 342.35 feet to an angle point;

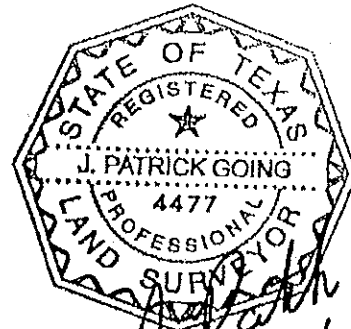
BRIO SUPERFUND SITE
19.7300 ACRES TRACT 2
PERRY AND AUSTIN LEAGUE A-55
PAGE 2 OF 2

South 41° 36' 37" West, 203.44 feet to an angle point;
South 42° 03' 34" West, 223.47 feet to an angle point;
South 43° 16' 25" West, 289.37 feet to an angle point;
South 86° 15' 07" West, 65.50 feet to an angle point;
South 86° 53' 00" West, 107.38 feet to an angle point;
North 10° 57' 07" West, 28.03 feet to an angle point;
North 43° 53' 17" West, 15.41 feet to an angle point;
North 45° 30' 17" East, 10.60 feet to an angle point;
North 16° 26' 16" West, 27.41 feet to an angle point;
North 18° 07' 29" West, 50.34 feet to an angle point;
North 20° 09' 20" West, 50.64 feet to an angle point;
North 22° 26' 02" West, 50.02 feet to an angle point;
North 27° 09' 14" West, 51.05 feet to an angle point;
North 34° 14' 53" West, 51.08 feet to an angle point;
North 40° 03' 57" West, 50.13 feet to an angle point;
North 45° 54' 05" West, 50.80 feet to an angle point;
North 51° 46' 01" West, 50.59 feet to an angle point;
North 58° 28' 37" West, 60.60 feet to an angle point;
North 62° 47' 53" West, 13.88 feet to an angle point;
North 42° 02' 05" East, 293.66 feet to an angle point;
North 04° 10' 17" West, 76.51 feet to an angle point;
North 39° 53' 20" East, 188.68 feet to an angle point;
North 39° 43' 59" East, 242.49 feet to an angle point;
North 40° 18' 39" East, 189.73 feet to an angle point;

North 41° 39' 21" East, 237.30 feet to the POINT OF BEGINNING and containing 19.7300 acres (859,441 square feet) of land.

This description is based upon a survey performed by J. Patrick Going, Registered Professional Land Surveyor, Texas Registration Number 4477, completed November 05, 2004, and is on file in the office of Baseline Corporation, Houston, Texas, Job No. 85.044.34.

REVISED: 04/01/05 CHANGED PAGE NUMBER ON PAGE 2
REVISED 12/10/04: ADDED CALL FOR 1.196 ACRE TRACT
REVISED 11/10/04: ADDED 1.4463 ACRE TRACT RECORDING
November 5, 2004
Job No. 85.044.34
CKT:bgb
File: BLACAD\8504434\WPM&B-DES-19-7300-ACRES-TRACT 2



SAVE AND EXCEPT FROM THE FOREGOING TRACT 2, THE FOLLOWING,
WHICH ARE PART OF THE ADJACENT SITE KNOWN AS THE DOP SUPERFUND SITE:

A tract out of Lot 67 of a subdivision of 2069 acres land out of the Perry and Austin League and the Thomas Labor, according to the map recorded in Volume 3, page 6, of the Harris County Map Records, and further described as follows:

Commencing at the North corner of Lot 67, said beginning point lying in the centerline of Choate Road, 86-foot right-of-way; THENCE S45°00'00"E, along the Northeast line of Lot 67, a distance of 56.00 feet to the Southeasterly right-of-way line of Choate Road; THENCE S45°00'00"W, along the Southeasterly right-of-way line of Choate Road, a distance of 61.73 feet to the place of beginning of the tract hereinafter described; THENCE from said beginning corner S45°00'00"E, parallel to the Northeast line of Lot 67, a distance of 281.47 feet to a point for corner; THENCE N45°12'50"E, a distance of 61.73 feet to a point for corner in the Northeast line of Lot 67; THENCE S45°00'00"E, along the Northeast line of Lot 67, a distance of 438.22 feet to a point for corner in an existing fence line; THENCE along said fence line with the following meanders; S45°00'14"W, a distance of 100.00 feet; S46°07'54"W, a distance of 300.06 feet; S87°19'06", a distance of 87.64 feet; S88°15'55"W, a distance of 87.54 feet to a point for corner in the Northeast line of drainage easement conveyed to Harris County Flood Control District, said point also being located in a curve of said easement; THENCE in a Northwesterly direction, along said drainage easement, around a curve to the left, having a radius of 483.10 feet, a distance of 104.16 feet to the P.T. for the curve; THENCE N17°17'55"W, a distance of 79.84 feet to the P.C. of curve; THENCE, in a Northwesterly direction, around said curve to the left, having a radius of 483.10 feet, a distance of 423.55 feet to the P.T. of the curve; THENCE N67°31'55", a distance of 26.59 feet to a point for corner, being the intersection of the said drainage easement with the Southeast right-of-way line of Choate Road; THENCE N45°00'00"E, parallel to Northeast line of Lot 67, a distance of 359.69 feet to the place of beginning and containing 6.55014 acres (285,324 square feet) more or less.

Also, a tract of the Southeast 1/2 of Lot 71, of a subdivision of 2069 acres of land out of the Perry and Austin League and the Thomas Labor, according to the plat recorded in Volume 3, page 6, of the Map Records of Harris County, and further described as follows:

Commencing at the North corner of Lot 71, said point lying in the centerline of Choate Road, 60-foot right-of-way; THENCE S45°00'00"E, along the Northeast line of Lot 71, a distance of 660 feet to the common lot corners of Lots 74, 75, the Southeast 1/2 of Lot 71, and the Northwest 1/2 of Lot 71; THENCE S45°00'00"W, along the Southeast line of the Northwest 1/2 of Lot 71,

a distance of 555.35 feet to the place of beginning of the tract hereinafter described; THENCE from said beginning corner S45°00'00"W, along the Northwest line of the Southeast 1/2 of Lot 71, a distance of 104.65 feet to a point for corner, being the West corner of the Southeast 1/2 of Lot 71; THENCE S45°00'00"E, along the Southwest line of the Southeast 1/2 of Lot 71, a distance of 115.92 feet to a point for corner in an existing fence line; THENCE along said existing fence line N45°99'14"E, a distance of 104.65 feet to a point for corner; THENCE N45°00'00", parallel to the Northeast line of Lot 71, a distance of 115.93 feet to the place of beginning and containing 0.27849 acres, (12,131 square feet) more or less.

Also a tract of Northwest 1/2 of Lot 71, of a subdivision of 2069 acres of land out of the Perry and Austin League and the Thomas Labor, according to the plat recorded in Volume 3, page 6 of the Map Records of Harris County, and further described as follows:

Commencing at the West corner of Lot 71, said point lying in the centerline of Choate Road, 60-foot right-of-way; THENCE S45°00'00"E, along the Southwest line of Lot 71, a distance of 337.70 feet to the place of beginning of the tract hereinafter described; THENCE from said beginning corner, continuing S45°00'00"E, along the Southwest line of Lot 71, a distance of 322.30 feet to a point for corner being the South corner of the West 1/2 of Lot 71; Thence N45°00'00"E, along the Southeast line of the Northwest 1/2 of Lot 71, a distance of 104.65 feet to a point for corner; THENCE N41°34'10"W, a distance of 70.00 feet to a point for corner; THENCE S48°25'50"W, a distance of 17.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 35.00 feet to a point for corner; THENCE N48°25'50"E, a distance of 3.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 6.00 feet to a point for corner; THENCE N48°25'50"E, a distance of 14.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 156.46 feet to a point for corner; THENCE S48°25'50"W, a distance of 79.73 feet to a point for corner; THENCE N40°39'10"W, a distance of 50.53 feet to a point for corner; THENCE S45°12'50"W, a distance of 44.89 feet to the place of beginning and containing 0.73352 acres (31,952 square feet), more or less.

EXHIBIT C

BRIO SITE TASK FORCE MEMBERS

BP Amoco Chemical Company

Arco Environmental Remediation LLC
for Atlantic Richfield Company

BFI Waste Systems of North America, Inc., as successor to
Browning-Ferris Inc. (Delaware)

Chevron Chemical Company LLC
for Gulf Oil Corporation

Fina Oil and Chemical Company
for Cos-Mar Company

GE Petrochemicals, Inc.
for Borg Warner Petrochemicals, Inc.

GE Petrochemicals, Inc.
for Cos-Mar Company

Hoechst Celanese Corporation
formerly American Hoechst Corporation,
now known as HNA Holdings, Inc.

Huntsman Corp.
for El Paso Products Company

Monsanto Company

Solutia Inc.

Union Carbide Corporation

* * * * *

EXHIBIT D

KNOWN WASTE CONSTITUENTS LEFT IN PLACE

The following primary constituents, along with other unlisted constituents, are known to be left in place at the Brio Superfund Site:

1. 1, 2 dichloroethane
2. 1, 1, 2 trichloroethane
3. vinyl chloride
4. bis (2-chloroethyl) ether
5. methylene chloride
6. phenanthrene
7. naphthalene
8. flouranthene

For information about the known concentrations of these constituents, refer to Table 1 of the March 31, 1988, Record of Decision for the Brio Refining Site, which is included as Attachment A to the Brio Site Consent Decree.

* * * * *

EXHIBIT E

BRIO SUPERFUND SITE RESTRICTIONS

Except as necessary or appropriate to implement, oversee, operate, maintain and monitor the remedial activities, which include but are not limited to inspecting, testing, surveying, monitoring, and treating hazardous substances on, over, under, and across the surface of the Site, the Site shall not be used for any of the following activities or purposes:

animal grazing;
animal husbandry;
hay or crop production and harvesting;
any other agricultural or commercial activity;
installation and operation of any groundwater wells for human or stock watering purposes;
installation and operation of disposal wells;
any human habitation or residence, either temporary or permanent;
recreational, hunting, fishing, hiking, exercising, and athletic activities;
drilling, mining, seismic exploration, surface construction with the intent to drill or mine,
or any other similar surface or subsurface activity;
blasting or any other use of explosives; or
any casual pursuit of activity;

and the Site shall only be used for such uses and activities as may be required or permitted pursuant to an Order issued by the Environmental Protection Agency.

* * * *

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW THE STATE OF TEXAS
COUNTY OF HARRIS
I hereby certify that this instrument was FILED in the number Sequence on the date and at the time stamped hereon by me, and was duly RECORDED. In the Official Public Records of Real Property of Harris County Texas on

AUG 30 2005



Dorothy B. Kuyman
COUNTY CLERK
HARRIS COUNTY TEXAS

RECORDER'S MEMORANDUM:
At the time of recordation, this instrument was found to be suitable for the best photographic reproduction because of illegibility, carbon or photo copy, discolored paper, etc. All blockouts, attachments and changes were present at the time the instrument was filed and recorded.

Handwritten signature
HARRIS COUNTY CLERK
HARRIS COUNTY TEXAS

2005 AUG 30 PM 2:23

FILED

GRANT OF ENVIRONMENTAL DEED RESTRICTIONS AND RIGHT OF ACCESS

STATE OF TEXAS

§

KNOW ALL BY THESE PRESENTS THAT:

§

HARRIS COUNTY

§

§

THIS GRANT OF ENVIRONMENTAL DEED RESTRICTIONS AND RIGHT OF ACCESS is granted by **UMB Bank N.A. f/k/a State Street Bank and Trust Company of Missouri, N.A.**, as **Trustee of the Brio Site Trust**, in its fiduciary and not its individual capacity ("Grantor") in favor of **Brio Site Task Force** ("Grantee").

RECITALS

A. Grantor is the owner of certain real property located in Harris County, Texas, more particularly described in Exhibit A attached hereto and made a part hereof (the "Restricted Property"), which property is located within the boundaries of the site referred to as the Brio Refining Superfund Site, located in Harris County Texas and more particularly described in Exhibit B attached hereto and made a part hereof (the "Brio Site").

B. Grantee is a group consisting of settlers to the Brio Refining Site Amended Consent Decree between the United States and AMOCO Chemical Co., et al., entered on March 8, 1999 (the "Amended Consent Decree") or their successors-in-interest who have performed a remediation of the Brio Site located at 2501 Dixie Farm Road in southern Harris County, Texas, including remediation on the Restricted Property.

C. The Brio Site is the subject of a response action under the jurisdiction of the United States Environmental Protection Agency ("EPA") pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA"), 42 U.S.C. § 9601 *et seq.*, and the National Contingency Plan, 40 C.F.R. § 300.400 *et seq.*

D. Pursuant to section 105 of CERCLA, EPA placed the Brio Site on the National Priorities List, set forth at 40 C.F.R. Part 300, on March 31, 1989.

E. The EPA issued its Record of Decision (ROD) R06-88/031 for the Brio Site on March 31, 1988 (the "1988 ROD"). The EPA issued an Amended ROD for the Brio Site on July 2, 1997 (the "Amended ROD", and together with the 1988 ROD, the "Brio ROD").

F. In accordance with the terms of the 1988 ROD, the Amended ROD, the Administrative Order on Consent, Docket No. CERCLA VI-13-88, between the EPA and Brio Refining, Inc., entered in 1988; the Brio Site Consent Decree between the United States and AMOCO Chemical Co., et al., entered on April 4, 1991; and the Amended Consent Decree, remedial action was conducted at the Brio Site (the "Remedial Action") by the Brio Site Task Force, comprised of those parties listed on Exhibit C attached hereto and made a part hereof or their predecessors or successors-in-interest (the "Brio Settlers").

GRANT

NOW, THEREFORE, in consideration of the Brio Site Task Force's performance of remediation of the Brio Site and its ongoing responsibility for the Brio Site pursuant to the aforementioned Amended Consent Decree and other good and valuable consideration, the receipt and sufficiency of which are acknowledged, Grantor covenants with the Grantee, EPA and their assigns, that he has the right to convey the easements, rights, obligations, covenants, and restrictions (collectively, the "Deed Restrictions") set forth herein, and Grantor further covenants with Grantee, EPA and their assigns that Grantor, his executors, heirs, successors and assigns will warrant and forever defend the same unto Grantee and its assigns forever against any person whomsoever claiming or to claim the same; and Grantor grants the Deed Restrictions in favor of Grantee and its assigns on the following terms and conditions:

1. Right of Access. Grantor hereby grants Grantee and its assigns a perpetual right of access in, on, upon, over, and through the Restricted Property for the purposes of: implementing, overseeing, operating, maintaining, and monitoring the remedial activities relating to the Brio Site, which include but are not limited to inspecting, testing, surveying, monitoring, and treating hazardous substances on, over, under, and across the surface of the Brio Site.

2. Scope of Restrictions. These Deed Restrictions affect those portion of the tracts or parcels of real property in Harris County, Texas owned by Grantor as described in Exhibit A attached hereto and made a part hereof (the "Restricted Property").

3. Information Concerning Site Condition. The Brio Site Task Force performed a remediation of the Brio Site, including the Restricted Property. Information about the known waste constituents that have been left in place on the Restricted Property is attached hereto as Exhibit D and is made part of this filing. Further information concerning this matter may be found by an examination of the EPA's Brio Refining Superfund Site Administrative Record at EPA Region 6, 1445 Ross Avenue, Dallas, Texas, 75202, and at the San Jacinto College-South Campus, 13735 Beamer Rd., Houston, Texas, 77089.

4. EPA Authority. EPA derives its authority to protect the environment and to review the remediation of the Brio Site from Section 101, *et seq.*, of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, ("CERCLA"), 42 U.S.C. § 9601, *et seq.*, and 40 C.F.R. Part 300. In accordance with this authority, EPA requires Grantor, as the owner of the Restricted Property, to provide the United States and its representatives access to the Restricted Property for the purposes of conducting any activity related to the Remedial Action. The Brio ROD recognized that permanent site control, including the imposition of necessary deed notices and restrictions (if possible) and restriction of access to the Brio Site, would be necessary. The Brio ROD also required long term, effective site control. Effective controls for the Restricted Property are described in Exhibits E attached hereto and made a part hereof.

5. TCEQ Authority. TCEQ derives its authority to investigate conditions on the Restricted Property from Texas Health and Safety Code, § 361.002, which enables TCEQ to

promulgate "closure and remediation" standards for hazardous waste sites to safeguard the health, welfare and physical property of the people of the State and to protect the environment by controlling the management of solid waste. In addition, pursuant to the Texas Water Code, §§ 5.012 and 5.013, Texas Water Code, Annotated, Chapter 5, TCEQ is given primary responsibility for implementing the laws of the State of Texas relating to water and to adopt any rules necessary to carry out its powers and duties under the Texas Water Code. In accordance with this authority, TCEQ requires certain persons to provide certification and/or recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation.

6. Effect of Deed Restrictions. These Deed Restrictions do not constitute a representation or warranty by EPA nor TCEQ of the suitability of this land for any purpose, nor do they constitute any guarantee by EPA or TCEQ that the remediation standards specified herein have been met by the Brio Site Task Force.

7. Restrictions on Use. Contaminants and waste deposited hereon have been remediated to meet nonresidential (i.e., industrial/commercial) soil criteria in accordance with a plan designed to meet the requirements of the Brio ROD; 30 Texas Administrative Code §335.561 (Risk Reduction Standard Number 3), which mandates that the remedy be designed to eliminate or reduce, to the maximum extent practicable, substantial present or future risk. The remediation plan requires continued post-closure care or engineering and institutional control measures in accordance with the risk reduction standards applicable at the time of this filing. Future use of the Restricted Property is limited as described in Exhibit E. Institutional or legal controls placed on the Restricted Property to ensure appropriate future use include these Deed Restrictions. The current or future owner must undertake actions as necessary to protect human health or the environment in accordance with the statutory authority of EPA and TCEQ.

8. Additional Information. The current owner of the Restricted Property is UMB Bank N.A. f/k/a State Street Bank and Trust Company of Missouri, N.A., as Trustee of the Brio Site Trust, in its fiduciary and not its individual capacity and the address where more specific information may be obtained is set forth in Section 3 above.

9. Provisions to Run with the Land. These Deed Restrictions set forth rights, liabilities, agreements, and obligations upon and subject to which the Restricted Property, or any portion thereof, shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, or conveyed. The rights, liabilities, agreements, and obligations herein set forth shall run with the Restricted Property, as applicable thereto, and any portion thereof, and shall inure to the benefit of the Grantee and EPA, as third party beneficiary, and their successors and be binding upon Grantor and all parties claiming by, through or under Grantor. The rights hereby granted to the Grantee, and its successors and assigns, include the right of Grantee and EPA, as third party beneficiary, to enforce these Deed Restrictions.

10. Grantor Concurrence. Grantor and all parties claiming by, through, or under Grantor covenant and agree with the provisions herein set forth and agree for and among themselves and any party claiming by, through or under them, and their respective agents, contractors, subcontractors and employees, that the Deed Restrictions herein established shall be

adhered to and not violated and that their respective interests in the Restricted Property shall be subject to the provisions herein set forth.

11. Incorporation into Deeds, Mortgages, Leases and Instruments of Transfer. Grantor hereby agrees to incorporate this Deed Restriction fully or by reference, into all deeds, easements, mortgages, deeds of trust, leases, licenses, occupancy agreements or any other instrument of transfer by which an interest in and/or a right to use the Restricted Property, or any portion thereof, is conveyed. Any transfer of the Restricted Property, or any portion thereof, shall take place only if the grantee agrees, as a part of the agreement to purchase or otherwise obtain an interest in the Property, that it will comply with the obligations of the Grantor to provide access and/or institutional controls, as set forth in these Deed Restrictions, with respect to such Restricted Property.

12. Severability. If any court or other tribunal determines that any provision of these Deed Restrictions is invalid or unenforceable, such provision shall be deemed to have been modified automatically to conform to the requirements for validity and enforceability as determined by such court or tribunal. In the event the provision invalidated is of such a nature that it cannot be so modified, the provision shall be deemed deleted from these Deed Restrictions as though it had never been included herein. In either case, the remaining provisions of these Deed Restrictions shall remain in full force and effect.

13. Governing Law. It is expressly agreed that the law of the State of Texas is the law governing these Deed Restrictions and any disputes regarding its contents and interpretation.

14. Binding Effect. The covenants, terms, conditions, and restrictions of these Deed Restrictions shall be binding upon the Grantor and his personal representatives, heirs, successors, and assigns, and shall continue as a servitude running into perpetuity with the Restricted Property.

15. Captions. The captions in this instrument have been inserted solely for convenience of reference and are not part of this instrument and shall have no effect upon construction or interpretation.

16. Notices. Any notice required hereunder shall be in writing and shall be delivered by hand, reputable overnight carrier, or certified mail, return receipt requested as follows:

To Grantor:

UMB, N.A., as Trustee for the Brio Site Trust
Corporate Trust Division
Attn: Robert Clasquin
2 South Broadway, Suite 435
St. Louis, MO 63102-1713

To Grantee:

Brio Site Task Force
Attn: Project Manager
2501 Dixie Farm Road
Houston, Texas 77089

with a copy to:

Baker Botts L.L.P.
Attn: Aileen Hooks
98 San Jacinto Blvd., Suite 1500
Austin, Texas 78701-4039

To EPA:

Office of Regional Counsel
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202-2733

All notices shall be deemed effective three (3) business days after delivery by the means set forth above. Grantor, Grantee or EPA (or any of their respective successors) may change its address for by written notice to the others (or their respective successors).

EXECUTED this the 24 day of August, 2005.

UMB Bank N.A., as Trustee for the Brio Site Trust
in its fiduciary and not in its individual capacity

By: Robert Clasquin
Name: Robert Clasquin
Title: Vice President

AGREED:

Brio Site Task Force

By: Michael L. House
Name: Michael L. House
Title: Project Manager

STATE OF Missouri §
COUNTY OF St. Louis §

This instrument was acknowledged before me on August ²⁴, 2005, by Robert Clasquin, Vice President of UMB Bank N.A., a national banking association, as Trustee for the Brio Site Trust, in its fiduciary and not in its individual capacity, on behalf of said national banking association.

Jeremy B. Cheak
Notary Public in and for the State of MO
My Commission Expires Sept 6, 2008
Jeremy B. Cheak
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI
Commission No. 04582522
My Commission expires Sept 06, 2008

STATE OF Missouri §
COUNTY OF St. Charles §

This instrument was acknowledged before me on August ^{23rd}, 2005 by Michael L. House, as Project Manager of the Brio Site Task Force, on behalf of said task force.

Joani M. Madden
Notary Public in and for the State of Missouri
My Commission Expires: 6/29/08

JOANI M. MADDEN
Notary Public - State of Missouri
County of St. Charles
My Commission Expires Jun. 29, 2008

EXHIBIT A

DESCRIPTION OF RESTRICTED PROPERTY

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BRIO SUPERFUND SITE
2.1485 ACRES
PERRY AND AUSTIN LEAGUE A-55
PAGE 1 OF 1

Being a tract or parcel of land containing 2.1485 acres (93,588 square feet), located in the Perry and Austin League, Abstract No. 55, Harris County, Texas, and being out of a called 9.099 acre tract described in deed executed May 19, 2002 from First Baptist Church of Dallas Undivided 1/6th interest to UMB Bank, N.A., Trustee of the Brio Site Trust recorded under Harris County Clerks File (HCCF) No. V822181 of the Official Public Records of Real Property, Harris County, Texas (OPRRPHCT). Said 2.1485 acre tract being more particularly described as follows:

Bearings shown hereon are based upon the Texas State Plane Coordinate System, South Central Zone and are Based upon the 1968 USC&GS adjustment of the North American Datum of 1927. Based upon City of Houston Monument 5850-0802.

COMMENCING at a three-quarter inch iron rod, found at the intersection of the existing southeasterly right-of-way line of Dixie Farm Road (width varies) and the southwesterly right-of-way line of Beamer Road (width varies);

THENCE, South 42° 05' 00" West, along said existing southeasterly right-of-way line of Dixie Farm Road a distance of 630.00 feet to a three-quarter inch iron rod, found for the southwesterly corner of said 9.099 acre tract;

THENCE, South 48° 27' 39" East, departing said existing southeasterly right-of-way line of Dixie Farm Road along the southwesterly property line of said 9.099 acre tract a distance of 24.15 feet to the intersection with a six foot chain link fence and POINT OF BEGINNING of the herein described tract;

THENCE, North 41° 39' 21" East, along said six foot chain link fence a distance of 151.50 feet to an angle point;

THENCE, South 49° 04' 25" East, continuing along said six foot chain link fence a distance of 181.55 feet to an angle point;

THENCE, South 48° 51' 56" East, continuing along said six foot chain link fence a distance of 349.87 feet to an angle point;

THENCE, South 51° 59' 12" East, continuing along said six foot chain link fence a distance of 75.30 feet to the intersection with the southeasterly property line of said 9.099 acre tract;

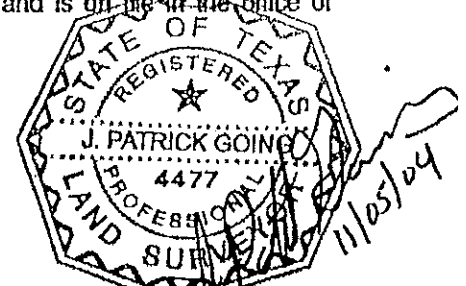
THENCE, South 42° 05' 08" West, along said southeasterly property line of the 9.099 acre tract a distance of 160.55 feet to a five-eighths inch iron rod with "Baseline Corp." cap, found for the southeasterly corner of the 9.099 acre tract;

THENCE, North 48° 27' 39" West, along said southwesterly property line of the 9.099 acre tract a distance of 605.34 feet to the POINT OF BEGINNING and containing 2.1485 acres (93,588 square feet) of land.

This description is based upon a survey performed by J. Patrick Going, Registered Professional Land Surveyor, Texas Registration Number 4477, completed November 05, 2004, and is on file in the office of Baseline Corporation, Houston, Texas, Job No. 85.044.34.

November 5, 2004
CKT:bgb
Job No. 85.044.34
File No. 8504434\WPM&B-DES-2-1485 ACRES

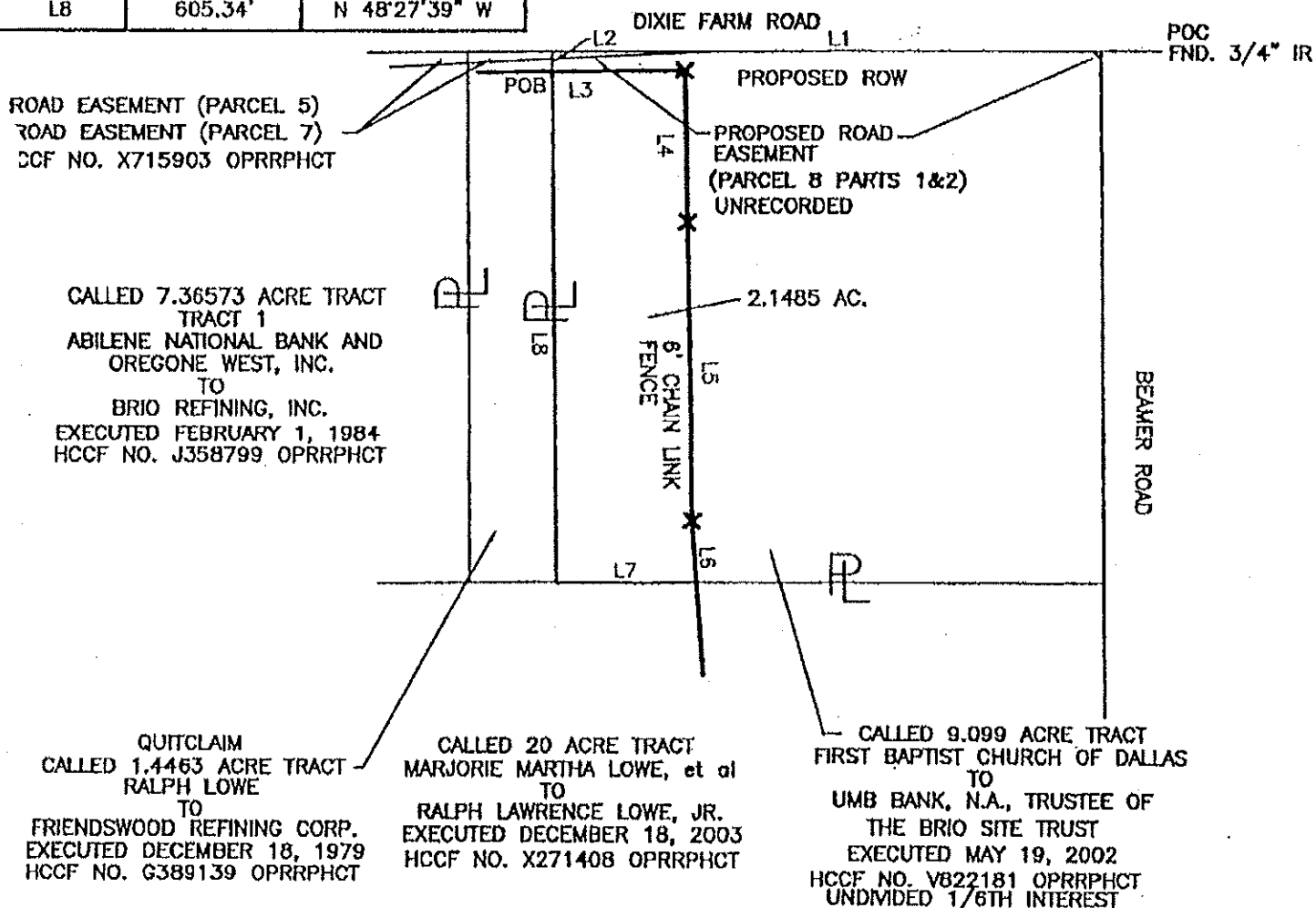
Exhibit A



LINE	DISTANCE	BEARING
L1	630.00'	S 42°05'00" W
L2	24.15'	S 48°27'39" E
L3	151.50'	N 41°39'21" E
L4	181.55'	S 49°04'25" E
L5	349.87'	S 48°51'56" E
L6	75.30'	S 51°59'12" E
L7	160.55'	S 42°05'08" W
L8	605.34'	N 48°27'39" W

PERRY AND AUSTIN LEAGUE ABSTRACT 55

0 200 400 Feet



NOTES

- 1) BEARINGS SHOWN HEREON ARE BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE AND ARE BASED UPON THE 1968 USC&GS ADJUSTMENT OF THE NORTH AMERICAN DATUM OF 1927. BASED UPON CITY OF HOUSTON MONUMENT 5850-0802.
- 2) A METES AND BOUNDS DESCRIPTION BASED UPON A SURVEY PERFORMED BY J. PATRICK GOING, REGISTERED PROFESSIONAL LAND SURVEYOR, TEXAS REGISTRATION NUMBER 4477, COMPLETED NOVEMBER 5, 2004, AND IS ON FILE IN THE OFFICE OF BASELINE CORPORATION, HOUSTON, TEXAS.
JOB NUMBER 85.044.34

Exhibit A

EXHIBIT

2.1485 ACRES
93,588 SQ. FT.

BEING OUT OF
A CALLED 9.099 ACRE TRACT
IN THE

PERRY AND AUSTIN LEAGUE, A-55
HARRIS COUNTY, TEXAS

BASELINE CORPORATION PROFESSIONAL SURVEYORS 1708 DREAMST DRIVE, SUITE #200, HOUSTON, TEXAS 77006 PHONE (713) 860-0155 FAX (713) 860-1354	
Scale : 1" = 200'	Job No. : 85.044.34
Date : 11/12/2004	FD No. : X-405
Drawn by : CKT	Approved by : JPO

34.523 ACRES
(1,503,831 SQUARE FEET)

W.D.C. HALL LEAGUE
ABSTRACT NO. 23
Page 1 of 4

State of Texas

County of Harris

Being a tract or parcel of land containing 34.523 acres (1,503,831 square feet), located in the W.D.C. Hall League, Abstract No. 23, Harris County, Texas, and being all of Southbend Section Three, Partial Replat as recorded under Film Code No. 380143 of the Harris County Map Records (HCMR), furthermore being a part of Southbend Section Two, Partial Replat as recorded under Film Code No. 380140 of said HCMR, and all of a certain called 2.736 acre tract of land conveyed by Southbend Properties, Inc. to Beamer Road Management Company by deed executed September 26, 1997 as filed for record under Harris County Clerk's File (HCCF) No. 8659057 of the Official Public Records of Real Property of Harris County, Texas (OPRRPHCT). Said 34.523 acre tract being more particularly described by metes and bounds as follows:

All bearings are based upon the southeasterly line of said Partial Replat of Southbend Section Three.

BEGINNING at a 5/8-inch iron rod found for the most easterly corner of said 2.736 acre tract, being on the southwesterly right-of-way line of Beamer Road (100 feet wide), same being on the northwesterly line of a 30 foot wide road easement (unopened) dedicated to the public by the plat of Geo. W. Jenkins Subdivision as recorded in Volume 2, Page 52 of said HCMR;

THENCE, South 45 degrees 27 minutes 27 seconds West, departing the southwesterly right-of-way line of said Beamer Road and along the southeasterly line of said 2.736 acre tract, at a distance of 309.66 feet passing the most southerly corner thereof, and continuing along the southeasterly line of the aforementioned Southbend Section Three, Partial Replat for a total distance of 2423.79 feet to a 5/8-inch iron rod set for corner on the easterly line of Mud Gully (HCFCD Unit A120-00-00, 190 feet wide), dedicated per plat of Sagebend Section Three as recorded in Volume 298 Page 5 of said HCMR;

THENCE, South 82 degrees 50 minutes 32 seconds West, departing said southeasterly line of Southbend Section Three, Partial Replat and along the most easterly line of Mud Gully, same being the most westerly line of said Southbend Section Three, Partial Replat, a distance of 102.98 feet to a 5/8-inch iron rod set for the point of curvature of a curve to the right;

THENCE, in a northwesterly direction continuing along said common line of Mud Gully and Southbend Section Three, Partial Replat, with said curve to the right having a central angle of 75 degrees 52 minutes 54 seconds, a radius of 245.89 feet, a long chord length of 302.37 feet, bearing North 59 degrees 12 minutes 59 seconds West, a distance along the arc of 325.65 feet to a 5/8-inch iron rod found for the point of tangency;

Exhibit A

34.523 ACRES
(1,503,831 SQUARE FEET)

Page 2 of 4

THENCE, North 21 degrees 16 minutes 29 seconds West, continuing along said common line, a distance of 84.49 feet to a 5/8-inch iron rod found for angle point;

THENCE, North 12 degrees 59 minutes 37 seconds West, continuing along said common line, a distance of 183.20 feet to a 5/8-inch iron rod found for angle point;

THENCE, North 00 degrees 47 minutes 45 seconds West, continuing along said common line, a distance of 75.12 feet to a 5/8-inch iron rod found for angle point;

THENCE, North 18 degrees 38 minutes 50 seconds East, continuing along said common line, a distance of 170.74 feet to a 5/8-inch iron rod found for angle point;

THENCE, North 14 degrees 37 minutes 08 seconds West, continuing along said common line, a distance of 227.76 feet to a 5/8-inch iron rod found for angle point;

THENCE, North 60 degrees 31 minutes 52 seconds West, continuing along said common line of Mud Gully and Southbend, Section Three, Partial Replat, a distance of 82.00 feet to a 5/8-inch iron rod set for corner on the common line between the aforementioned Southbend Section Two Partial Replat and Southbend Section Three Partial Replat;

THENCE, North 32 degrees 16 minutes 12 seconds East, departing said easterly line of Mud Gully and continuing along said common line of Southbend Section Two, Partial Replat, and Southbend Section Three, Partial Replat, a distance of 204.48 feet to a 5/8-inch iron rod set for corner, from which a 1/4-inch iron rod found bears North 22 degrees 07 minutes East, a distance of 0.83 feet;

THENCE, South 60 degrees 01 minutes 13 seconds East, continuing along said common line, a distance of 402.87 feet to a 5/8-inch iron rod set for corner, from which a 1/4-inch iron rod found bears South 87 degrees 22 minutes East, a distance of 0.77 feet;

THENCE, North 29 degrees 58 minutes 47 seconds East, along the northerly line of a storm sewer access easement as shown on the aforementioned Southbend Section Two Partial Replat, a distance of 135.00 feet to a drill hole set in concrete for the point of curvature of a curve to the left;

THENCE, in a northwesterly direction along the northerly line of said storm sewer access easement with said curve to the left having a central angle of 85 degrees 28 minutes 30 seconds, a radius of 10.00 feet, a long chord length of 13.57 feet, bearing North 12 degrees 45 minutes 28 seconds West, and a distance along the arc of 14.92 feet to a drill hole set in concrete for the end of curve;

34.523 ACRES
(1,503,831 SQUARE FEET)

Page 3 of 4

THENCE, North 29 degrees 58 minutes 47 seconds East, continuing along the northerly line of said storm sewer access easement, as shown on Southbend Subdivision, Section Two, Partial Replat, a distance of 30.03 feet to a 5/8-inch iron rod set for corner;

THENCE, South 60 degrees 01 minutes 13 seconds East, along the easterly line of said storm sewer access easement, a distance of 178.92 feet to a 5/8-inch iron rod set for corner on the aforementioned common line between Southbend Section Two, Partial Replat and Southbend Section Three, Partial Replat;

THENCE, North 29 degrees 58 minutes 47 seconds East, along said common line, a distance of 64.32 feet to a 5/8-inch iron rod found for angle point;

THENCE, North 45 degrees 27 minutes 27 seconds East, along said common line, a distance of 859.52 feet to a 5/8-inch iron rod set for corner, from which a 5/8-inch iron rod found bears North 44 degrees 33 minutes East, a distance of 1.30 feet. Said set iron rod being on the westerly line of a certain called 2.750 acre tract as conveyed by Roosevelt Bank to Roosevelt Texas Holding Company, Inc. by deed executed November 10, 1994 as recorded under HCCF No. R157895 of said OPRRPACT, said 2.750 acres is also called Olcott Gas Unit No. 2 Drill Site according to plat recorded under Volume 332, Page 146 of said HCMR;

THENCE, South 45 degrees 13 minutes 30 seconds East, along the common line of said 2.750 acre tract and the aforementioned Southbend Section Three, Partial Replat, a distance of 110.00 feet to a 5/8-inch iron rod set for corner;

THENCE, North 45 degrees 27 minutes 27 seconds East, along said common line, a distance of 328.94 feet to a 5/8-inch iron rod set for corner on the northwesterly right-of-way line of South Hill Drive (60 feet wide) as shown on the original plat of Southbend Section Three as recorded in Volume 304, page 64 of said HCMR;

THENCE, South 45 degrees 13 minutes 30 seconds East, departing the northwesterly right-of-way line of said South Hill Drive, a distance of 60.00 feet to a 5/8-inch iron rod set for corner on the southeasterly right-of-way line of said South Hill Drive, same being the northerly line of said Southbend Section Three, Partial Replat;

THENCE, North 45 degrees 27 minutes 27 seconds East, along the southeasterly right-of-way line of said South Hill Drive, at a distance of 70.36 feet passing the northwesterly corner of the aforementioned 2.736 acre tract and continuing for a total distance of 370.03 feet to a 5/8-inch iron rod found for cut-back corner on the northerly line of the aforementioned 2.736 acre tract;

34.523 ACRES
(1,503,831 SQUARE FEET)

Page 4 of 4

THENCE, South 89 degrees 53 minutes 01 seconds East, with said cut-back, a distance of 14.21 feet to a 5/8-inch iron rod found on the southwesterly right-of-way line of Beamer Road (100 feet wide);

THENCE, South 45 degrees 13 minutes 30 second East, along the common line of said Beamer Road and said 2.736 acre tract, a distance of 375.03 feet to the POINT OF BEGINNING and containing 34.523 acres (1,503,831 square feet);

This description is based on a Land Title Survey and Plat by J. Patrick Goins, Registered Professional Land Surveyor, License Number 4477, completed April 30, 1998, and is on file in the office of Baseline Corporation, Houston, Texas, Job No. 85.044.13

April 30, 1998
LRB:hgb
Job No. 85.044.13
File: BLACAD\85044\8504413\WP\M&B-DE5



EXHIBIT B

DESCRIPTION OF BRIO REFINING SUPERFUND SITE

The legal description of the Site, described in two tracts, is presented on the next seven pages.

THE
S
H

BRIO SUPERFUND SITE
70.1767 ACRES TRACT 1
W.D.C. HALL LEAGUE A-23
PAGE 1 OF 3

Being a tract or parcel of land containing 70.1767 acres (3,056,899 square feet), located in the W.D.C Hall League, Abstract No. 23, Harris County, Texas, and being out of a called 46.7149 acre tract (tract 2) described in deed executed February 1, 1984 from Abilene National Bank and Oregone West, Inc. to Brio Refining, Inc. recorded under Harris County Clerks File (HCCF) No. J358799 of the Official Public Records of Real Property, Harris County, Texas (OPRRPHCT), a called 34.523 acre tract described in deed executed November 20, 1998 from Beamer Road Management Company to State Street Bank and Trust Company of Missouri, N.A. as Trustee of the Brio Site Trust recorded under HCCF No. T396582 of the OPRRPHCT, a called 4.7409 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271411 of the OPRRPHCT, and a called 3.0 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271411 of the OPRRPHCT. Said 70.1767 acre tract is wholly within a six foot chain link fence and being more particularly described as follows:

Bearings shown hereon are based upon the Texas State Plane Coordinate System, South Central Zone and are Based upon the 1988 USC&GS adjustment of the North American Datum of 1927. Based upon City of Houston Monument 5850-0802.

COMMENCING at a five-eighths inch iron rod with TxDot Aluminum cap, found at the southerly end of the existing cutback at the southwest corner of Dixie Farm Road (width varies) and Beamer Road (100 feet wide) as recorded under HCCF No. X966559 (Parcel 9) of the OPRRPHCT;

THENCE, South 40° 23' 53" West, along the existing northwesterly right-of-way (easement) line of Dixie Farm Road a distance of 320.54 feet to a point being at a right angle to a six foot chain link fence corner;

THENCE, North 49° 36' 07" West, departing the existing northwesterly right-of-way line of Dixie Farm Road at a right angle a distance of 1.16 feet to a six foot chain link fence corner and POINT OF BEGINNING of the herein described tract;

THENCE, along the meanders of said six foot chain link fence the following courses;

North 48° 09' 07" West, 21.74 feet to an angle point;
North 17° 33' 33" East, 122.96 feet to an angle point;
North 11° 23' 57" East, 63.46 feet to an angle point;
North 01° 16' 14" East, 96.73 feet to an angle point;
North 08° 36' 50" West, 59.61 feet to an angle point;
North 27° 28' 33" West, 60.66 feet to an angle point;
North 40° 57' 43" West, 32.44 feet to an angle point;
North 48° 49' 40" West, 191.49 feet to an angle point;
North 75° 26' 06" West, 32.23 feet to an angle point;
North 87° 32' 13" West, 270.07 feet to an angle point;
South 72° 29' 50" West, 39.34 feet to an angle point;
North 86° 39' 01" West, 138.27 feet to an angle point;
North 48° 31' 03" West, 78.40 feet to an angle point;

BRIO SUPERFUND SITE
70.1767 ACRES TRACT 1
W.D.C. HALL LEAGUE A-23
PAGE 2 OF 3

THENCE, North 05° 02' 42" West, departing said six foot chain link fence a distance of 40.90 feet to a point at the southwest corner of a called 2.736 acre tract described in deed executed September 26, 1997, from Southbend Properties, Inc. to Beamer Road Management Company, recorded under HCCF No. S659057 of the OPRRPACT;

THENCE, North 48° 31' 43" West, along the west property line of said called 2.736 acre tract a distance of 382.66 feet to a point at the intersection with said six foot chain link fence;

THENCE, continuing along the meanders of said six foot chain link fence the following courses;

South 42° 05' 04" West, 89.35 feet to an angle point;
North 47° 59' 35" West, 59.34 feet to an angle point;
South 42° 11' 07" West, 310.94 feet to an angle point;
South 48° 25' 54" East, 8.97 feet to an angle point;
South 42° 09' 42" West, 467.35 feet to an angle point;
South 42° 05' 37" West, 297.90 feet to an angle point;
South 37° 21' 04" West, 129.93 feet to an angle point;
South 66° 54' 05" West, 10.01 feet to an angle point;
North 63° 21' 22" West, 268.95 feet to an angle point;
South 26° 36' 11" West, 378.18 feet to an angle point;
South 26° 27' 57" West, 285.79 feet to an angle point;
South 25° 52' 09" West, 208.60 feet to an angle point;
South 22° 42' 10" East, 208.14 feet to an angle point;
South 73° 36' 01" East, 178.41 feet to an angle point;
North 85° 44' 59" East, 108.02 feet to an angle point;
South 23° 38' 01" East, 28.43 feet to an angle point;
South 88° 29' 16" East, 30.47 feet to an angle point;
North 88° 10' 58" East, 69.50 feet to an angle point;
South 81° 15' 09" East, 110.66 feet to an angle point;
South 82° 13' 46" East, 189.90 feet to an angle point;
South 82° 35' 38" East, 159.32 feet to an angle point;
South 82° 20' 16" East, 170.02 feet to an angle point;
South 74° 02' 38" East, 140.18 feet to an angle point;
South 76° 58' 43" East, 128.51 feet to an angle point;
South 87° 38' 56" East, 29.35 feet to an angle point;
South 77° 48' 01" East, 173.77 feet to an angle point;
South 50° 43' 24" East, 8.59 feet to an angle point;
North 41° 56' 08" East, 96.21 feet to an angle point;
North 41° 23' 20" East, 349.10 feet to an angle point;
North 40° 18' 15" East, 338.94 feet to an angle point;
North 39° 00' 49" East, 270.04 feet to an angle point;
North 39° 52' 38" East, 415.21 feet to an angle point;

BRIO SUPERFUND SITE
70.1767 ACRES TRACT 1
W.D.C. HALL LEAGUE A-23
PAGE 3 OF 3

North 40° 28' 43" East, 23.12 feet to the POINT OF BEGINNING and containing 70.1767 acres (3,056,899 square feet) of land.

This description is based upon a survey performed by J. Patrick Going, Registered Professional Land Surveyor, Texas Registration Number 4477, completed November 05, 2004, and is on file in the office of Baseline Corporation, Houston, Texas, Job No. 85.044.34.

REVISED 04/01/05: REMOVED CALL FOR 2.736 ACRE TRACT IN PREAMBLE

REVISED 12/10/04: ADDED CALL FOR 2.736 ACRE TRACT

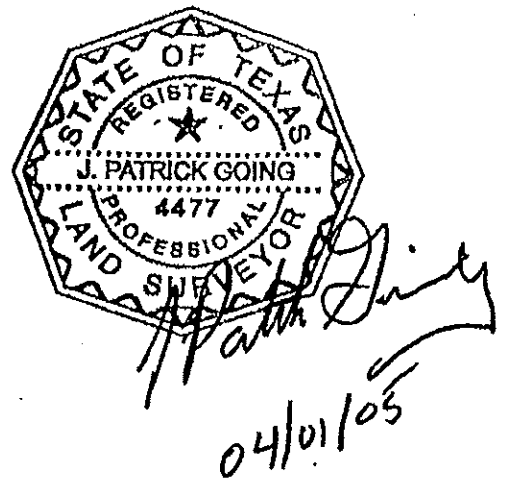
REVISED 11/11/04:

November 5, 2004

Job No. 85.044.34

OKT:bgb

File: BLACAD\8504434\WP\M&B-DES-70-1767-ACRES-TRACT-1.DOC



BRIO SUPERFUND SITE
19.7300 ACRES TRACT 2
PERRY AND AUSTIN LEAGUE A-55
PAGE 1 OF 2

Being a tract or parcel of land containing 19.7300 acres (859,441 square feet), located in the Perry and Austin League, Abstract No. 55, Harris County, Texas, and being out of a called 9.099 acre tract described in deed executed May 19, 2002 from First Baptist Church of Dallas to UMB Bank, N.A., Trustee of the Brio Site Trust recorded under Harris County Clerks File (HCCF) No. V822181 of the Official Public Records of Real Property, Harris County, Texas (OPRRPHCT), a called 20 acre tract described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271408 of the OPRRPHCT, a called 7.36573 acre tract (tract 1) described in deed executed February 1, 1984 from Abilene National Bank and Oregon West, Inc. to Brio Refining, Inc. recorded under HCCF No. J358799 of the OPRRPHCT, a called 0.73352 acre tract (tract 1) described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271409 of the OPRRPHCT, a called 6.55014 acre tract (tract 3) described in deed executed December 18, 2003 from Marjorie Martha Lowe, et al to Ralph Lawrence Lowe, Jr. recorded under HCCF No. X271409 of the OPRRPHCT, a called 0.39904 acre tract (tract 4) described in deed executed February 1, 1984 from Abilene National Bank and Oregon West, Inc. to Brio Refining, Inc. recorded under HCCF No. J358799 of the OPRRPHCT, a called 1.4463 acre tract described in deed executed December 18, 1979 from Ralph Lowe to Friendswood Refining Corp. recorded under HCCF No. G389139 of the OPRRPHCT, a called 0.278 acre tract and a called 1.196 acre tract described in deed executed August 30, 1978, recorded under HCCF No. F790654 of the OPRRPHCT, as well as that certain called 0.754 acre tract. Said 19.7300 acre tract is wholly within a six foot chain link fence and being more particularly described as follows:

Bearings shown hereon are based upon the Texas State Plane Coordinate System, South Central Zone and are Based upon the 1988 USC&GS adjustment of the North American Datum of 1927. Based upon City of Houston Monument 5850-0802.

COMMENCING at a three-quarter inch iron rod, found at the intersection of the existing southeasterly right-of-way line of Dixie Farm Road (width varies) and the southwesterly right-of-way line of Beamer Road (width varies);

THENCE, South 42° 05' 00" West, along said existing southeasterly right-of-way line of Dixie Farm Road a distance of 478.27 feet to a point being at a right angle to a six foot chain link fence corner;

THENCE, South 47° 55' 00" East, departing the proposed southeasterly right-of-way line of Dixie Farm Road at a right angle a distance of 23.02 feet to a six foot chain link fence corner and POINT OF BEGINNING of the herein described tract;

THENCE, along the meanders of said six foot chain link fence the following courses;

South 49° 04' 25" East, 181.55 feet to an angle point;
South 48° 51' 56" East, 349.87 feet to an angle point;
South 51° 59' 12" East, 186.08 feet to an angle point;
South 41° 30' 58" West, 178.94 feet to an angle point;
South 41° 39' 01" West, 342.35 feet to an angle point;

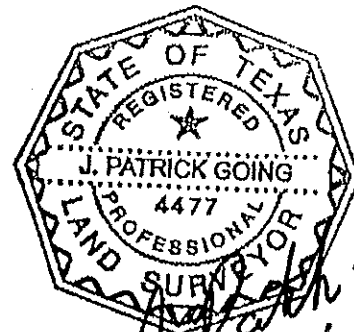
BRIO SUPERFUND SITE
19.7300 ACRES TRACT 2
PERRY AND AUSTIN LEAGUE A-55
PAGE 2 OF 2

South 41° 36' 37" West, 203.44 feet to an angle point;
South 42° 03' 34" West, 223.47 feet to an angle point;
South 43° 16' 25" West, 289.37 feet to an angle point;
South 86° 15' 07" West, 65.50 feet to an angle point;
South 86° 53' 00" West, 107.38 feet to an angle point;
North 10° 57' 07" West, 28.03 feet to an angle point;
North 43° 53' 17" West, 15.41 feet to an angle point;
North 45° 30' 17" East, 10.60 feet to an angle point;
North 16° 26' 16" West, 27.41 feet to an angle point;
North 18° 07' 29" West, 50.34 feet to an angle point;
North 20° 09' 20" West, 50.64 feet to an angle point;
North 22° 28' 02" West, 50.02 feet to an angle point;
North 27° 09' 14" West, 51.05 feet to an angle point;
North 34° 14' 53" West, 51.08 feet to an angle point;
North 40° 03' 57" West, 50.13 feet to an angle point;
North 45° 54' 05" West, 50.80 feet to an angle point;
North 51° 46' 01" West, 50.59 feet to an angle point;
North 58° 28' 37" West, 60.60 feet to an angle point;
North 62° 47' 53" West, 13.88 feet to an angle point;
North 42° 02' 05" East, 293.66 feet to an angle point;
North 04° 10' 17" West, 76.51 feet to an angle point;
North 39° 53' 20" East, 188.68 feet to an angle point;
North 39° 43' 59" East, 242.49 feet to an angle point;
North 40° 18' 39" East, 189.73 feet to an angle point;

North 41° 39' 21" East, 237.30 feet to the POINT OF BEGINNING and containing 19.7300 acres (859,441 square feet) of land.

This description is based upon a survey performed by J. Patrick Going, Registered Professional Land Surveyor, Texas Registration Number 4477, completed November 05, 2004, and is on file in the office of Baseline Corporation, Houston, Texas, Job No. 85.044.34.

REVISED: 04/01/05 CHANGED PAGE NUMBER ON PAGE 2
REVISED 12/10/04: ADDED CALL FOR 1.196 ACRE TRACT
REVISED 11/10/04: ADDED 1.4483 ACRE TRACT RECORDING
November 5, 2004
Job No. 85.044.34
CKT:bgb
File: BLACAD\8504434\WPIM&B-DES-19-7300-ACRES-TRACT 2



THENCE from said beginning corner S45°00'00"W, along the Northwest line of the Southeast 1/2 of Lot 71, a distance of 104.65 feet to a point for corner, being the West corner of the Southeast 1/2 of Lot 71; THENCE S45°00'00"E, along the Southwest line of the Southeast 1/2 of Lot 71, a distance of 115.92 feet to a point for corner in an existing fence line; THENCE along said existing fence line N45°99'14"E, a distance of 104.65 feet to a point for corner; THENCE N45°00'00", parallel to the Northeast line of Lot 71, a distance of 115.93 feet to the place of beginning and containing 0.27849 acres, (12,131 square feet) more or less.

Also a tract of Northwest 1/2 of Lot 71, of a subdivision of 2069 acres of land out of the Perry and Austin League and the Thomas Labor, according to the plat recorded in Volume 3, page 6 of the Map Records of Harris County, and further described as follows:

Commencing at the West corner of Lot 71, said point lying in the centerline of Choate Road, 60-foot right-of-way; THENCE S45°00'00"E, along the Southwest line of Lot 71, a distance of 337.70 feet to the place of beginning of the tract hereinafter described; THENCE from said beginning corner, continuing S45°00'00"E, along the Southwest line of Lot 71, a distance of 322.30 feet to a point for corner being the South corner of the West 1/2 of Lot 71; Thence N45°00'00"E, along the Southeast line of the Northwest 1/2 of Lot 71, a distance of 104.65 feet to a point for corner; THENCE N41°34'10"W, a distance of 70.00 feet to a point for corner; THENCE S48°25'50"W, a distance of 17.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 35.00 feet to a point for corner; THENCE N48°25'50"E, a distance of 3.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 6.00 feet to a point for corner, THENCE N48°25'50"E, a distance of 14.00 feet to a point for corner; THENCE N41°34'10"W, a distance of 156.46 feet to a point for corner; THENCE S48°25'50"W, a distance of 79.73 feet to a point for corner; THENCE N40°39'10"W, a distance of 50.53 feet to a point for corner; THENCE S45°12'50"W, a distance of 44.89 feet to the place of beginning and containing 0.73352 acres (31,952 square feet), more or less.

EXHIBIT C

BRIO SITE TASK FORCE MEMBERS

BP Amoco Chemical Company

Arco Environmental Remediation LLC
for Atlantic Richfield Company

BFI Waste Systems of North America, Inc., as successor to
Browning-Ferris Inc. (Delaware)

Chevron Chemical Company LLC
for Gulf Oil Corporation

Fina Oil and Chemical Company
for Cos-Mar Company

GE Petrochemicals, Inc.
for Borg Warner Petrochemicals, Inc.

GE Petrochemicals, Inc.
for Cos-Mar Company

Hoechst Celanese Corporation
formerly American Hoechst Corporation,
now known as HNA Holdings, Inc.

Huntsman Corp.
for El Paso Products Company

Monsanto Company

Solutia Inc.

Union Carbide Corporation

* * * * *

EXHIBIT D

KNOWN WASTE CONSTITUENTS LEFT IN PLACE

The following primary constituents, along with other unlisted constituents, are known to be left in place at the Brio Superfund Site:

1. 1, 2 dichloroethane
2. 1, 1, 2 trichloroethane
3. vinyl chloride
4. bis (2-chloroethyl) ether
5. methylene chloride
6. phenanthrene
7. naphthalene
8. flouranthene

For information about the known concentrations of these constituents, refer to Table 1 of the March 31, 1988, Record of Decision for the Brio Refining Site, which is included as Attachment A to the Brio Site Consent Decree.

* * * * *

EXHIBIT E

BRIO SUPERFUND SITE RESTRICTIONS

Except as necessary or appropriate to implement, oversee, operate, maintain and monitor the remedial activities, which include but are not limited to inspecting, testing, surveying, monitoring, and treating hazardous substances on, over, under, and across the surface of the Site, the Site shall not be used for any of the following activities or purposes:

animal grazing;
animal husbandry;
hay or crop production and harvesting;
any other agricultural or commercial activity;
installation and operation of any groundwater wells for human or stock watering purposes;
installation and operation of disposal wells;
any human habitation or residence, either temporary or permanent;
recreational, hunting, fishing, hiking, exercising, and athletic activities;
drilling, mining, seismic exploration, surface construction with the intent to drill or mine, or any other similar surface or subsurface activity;
blasting or any other use of explosives; or
any casual pursuit of activity;

and the Site shall only be used for such uses and activities as may be required or permitted pursuant to an Order issued by the Environmental Protection Agency.

* * * * *

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW
THE STATE OF TEXAS
COUNTY OF HARRIS
I hereby certify that this instrument was FILED in file number Sequence on the date and at the time stamped hereon by me: and was duly RECORDED. In the Official Public Records of Real Property of Harris County Texas on

AUG 30 2005



Dorely B. Layman

COUNTY CLERK
HARRIS COUNTY TEXAS

FILED
2005 AUG 30 PM 2:23
COUNTY CLERK
HARRIS COUNTY TEXAS

APPENDIX H
SITE GEOLOGY

BRIO REFINERY SUPERFUND SITE GEOLOGY

The Brio site is located within the Pleistocene Deltaic Plain of the Brazos River, known as the Alameda Delta. The site is underlain with Pleistocene and Pliocene deposits to a depth of approximately 2400.0 feet as shown on Figure 1. The aquifers used to supply water for domestic, industrial and agricultural purposes are the Lower Chicot and Evangeline, which are confined aquifers isolated from surface recharge. The groundwater flow in the Lower Chicot and the Evangeline is to the southeast.

The Friendswood Oil Field borders the site and is an extensively explored oil and gas field. The Oligocene Age Brio Formation of the Texas Gulf Coast Region is the oil producing zone with wells from 4000 to 7000 feet deep.

The site-specific geology that was under investigation during the Remedial Investigation/Feasibility Study (RI/FS) was the Beaumont Formation as shown in Figure 2. The results from the Feasibility Study and Summary Report are given in the following paragraphs.

The Beaumont Formation is separated into five major units (Figure 2). The Upper Clay Unit is composed of clay and silty clay. The unit is continuous across the site and ranges in depth from 14 to 32 feet. The Numerous Sand Channels Zone (NSCZ) is the next unit and is comprised of interbedded sands, sandy silts, silty sands, clayey silts and silty clays. The thickness of the NSCZ varies across the site from less than 10 feet to over 20 feet. The NSCZ is the upper water bearing unit with well yields less than 10 gpm. The Middle Clay Unit is next and is composed of silty clay/clayey silt. The thickness ranges from 8 to 20 feet. The Middle Clay separates the NSCZ from the lower aquifer and forms a confining layer over the lower unit. The Fifty-Foot Sand Zone (FFSZ) is the fourth unit and occurs between 52 and 62 feet below ground surface. The thickness varies from 35 to 45 feet. The FFSZ has a reasonably high well yield. The fifth and last unit is the Lower Clay unit, a silty clay approximately 100 to 120 feet thick. The unit extends to at least 200 feet below ground surface.

A salt dome fault is located in the western part of the Brio site. According to Dr. Carl Norman of the University of Houston, the ground movement north of the fault has been downward in relation to the ground south of the fault. The fault could cause a slight reduction in lateral groundwater flow for various units across the fault. At this time, there is no evidence to support a vertical hydraulic connection between the units along the fault.

The NSCZ and the FFSZ are the two water bearing units investigated at the Brio site. The NSCZ potentiometric surface indicates that the groundwater flow is towards Mud Gully and will either run parallel to the gully or discharge into the gully. The groundwater flow volumes range from 6.6 to 102.0 gallons per year per square foot of cross-sectional area. The velocity of the groundwater ranged from 2.9 to 68.0 feet per year.

The potentiometric surface of the FFSZ showed a hydraulic gradient of 0.0001 in the south-southeast direction. Flow would be towards the Gulf Coast Lateral groundwater flow volumes range from 1.2 to 12.0 gallons per year per square foot of cross sectional area. Groundwater in the FFSZ flows in an eastwardly direction at rates on the order of 10 to 50 feet per year.


The Middle Clay Unit has an upward hydraulic gradient thereby minimizing the potential for groundwater movement between the NSCZ and the FFSZ over most of the site.

SYSTEM	SERIES	UNIT	APPROX. ELEVATION FT. NGVD	
Q U A T E R N A R Y	P L E I S T O C E N E	BEAUMONT FORMATION		UPPER CHICOT AQUIFER
		MONTGOMERY FORMATION	-160'	
		BENTLEY FORMATION		LOWER CHICOT AQUIFER
		WILLIS FORMATION		
T E R T I A R Y	P L E I O C E N E	GOLIAD SAND	-550'	EVANGELINE AQUIFER
	M I O C E N E		-2,500'	
		FLEMING FORMATION	-2,700'	

NOTES:


1. Drawing not to scale.
2. Modified from Gabrysch, 1980
3. NGVD refers to National Geodetic Vertical Datum

Information obtained from the IT Corporation
Summary Report

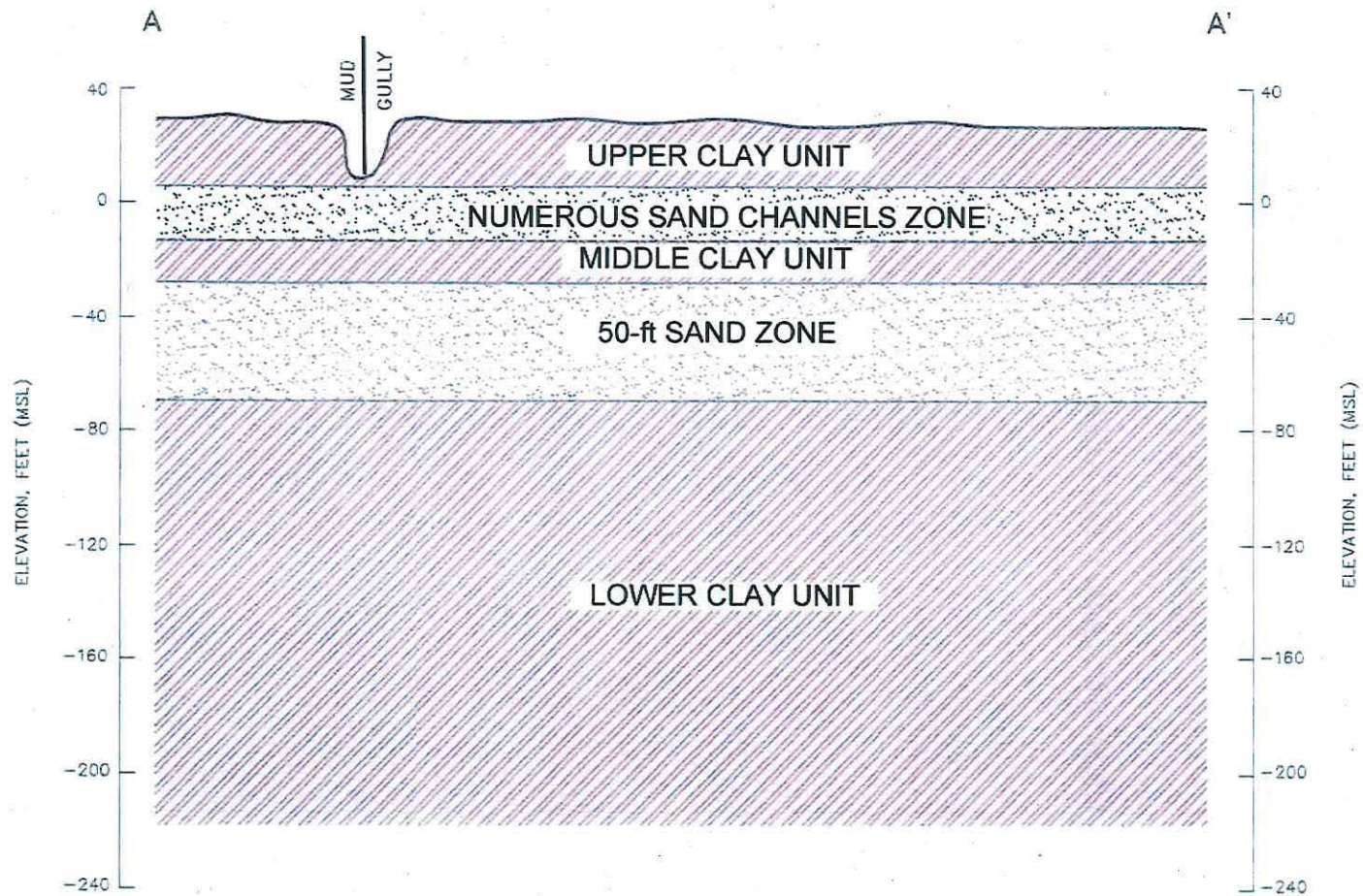
BRIO REFINERY SITE RECORD DECISION			
Generalized Stratigraphic Column			
	DATE 2-18-88	FIGURE 1	

Lithostratigraphic Units			Site Lithologic Units	Site Hydrologic Units
Beaumont Formation	UPPER	Eunice Member	Upper Clay Unit	Semi-Confining Layer
			Numerous Sand Channels Zone (NSCZ)	Upper Water-Bearing Zone
	LOWER	Oberlin Member	Middle Clay Unit	Aquitard
			Fifty Foot Sand Zone	Lower Water-Bearing Zone
Lissie Formation			Lower Clay Unit	Aquitard

Information obtained from the IT Corporation
Summary Report

BRIO REFINERY SITE RECORD DECISION			
Site Lithologic Units			
	DATE 2-18-88	FIGURE 2	

**FIGURE 3
GEOLOGIC CROSS-SECTION**



USGS RESPONSE PROJECT			
Woodward-Clyde Consultants Engineering & sciences applied to the earth & its environment Houston, Texas			
BRIO SITE TASK FORCE HOUSTON, TEXAS			
SCALE:	MADE BY: SJ	DATE: 7/7/93	FILE NO.
NOTED	CHECKED BY:	DATE:	92T317C
GENERALIZED GEOLOGIC CROSS-SECTION A-A'			

APPENDIX I

CHRONOLOGY OF SITE EVENTS

Chronology of Site Events

Event	Date
Chemical Reprocessing and Refining Activities at the Site	1950's - 1982
Removal Activities – Placement of Pit Cover	1985
Record of Decision Signed	3/31/1988
Final Listing on EPA National Priorities List	3/1989
Start of On-Site Construction for Building/Structures Demolition and Decontamination (1 st phase of Site Remedial Action and date that triggers a five-year review)	6/29/1989
Facility dismantlement completed	12/1989
Consent Decree Finalizing Settlement for Responsible Party Performance of Remedy Entered by Federal Court	4/04/1991
EPA approval of Remedial Design	7/1993
ROD Amendment Issued by EPA, Changing from On-Site Incineration to Containment	7/2/1997
First Five-Year Review (Type Ia)	1/8/1998
Consent Decree Amended to Include Modified Remedy	3/5/1999
Start of On-Site Construction for Modified Remedy	7/11/2000
Completion of Brio North Soil Bentonite Barrier Wall	11/2/2000
Completion of Brio South Soil Bentonite Barrier Wall	12/6/2000
Completion of Sheet Pile Wall on Brio North	10/10/2001
Completion of Brio South Cover System	2/21/2002
Completion of Sheet Pile Wall Crossing Dixie Farm Road	5/5/2002
Second Five-Year Review	5/13/2003
Completion of Mud Gully Improvements	6/13/2003
Completion of Brio North Cover System	10/2003
Completion of Groundwater/DNAPL Recovery System	4/9/2004
Remedial Action Completion Report	12/16/2004
First Annual Effectiveness Report	9/1/2005
Completion of Gas Treatment System	11/16/2005
Final Inspection (EPA & TCEQ)	4/20/2006
Final Close Out Report (signed)	5/26/2006
Second Annual Effectiveness Report	11/8/2006
Deletion from National Priorities List	12/28/2006
TCEQ Interim Forest and Wetlands Planting Completion Certificates	6/21/2007
Third Annual Effectiveness Report	7/18/2007
Third Five-Year Review Report	4/25/2008
Fourth Annual Effectiveness Report	7/8/2009
Phase I Fifty-Foot Sand Zone (FFSZ) Groundwater Investigation Report	1/14/2011
Maintenance, Operations, and Monitoring Plan, February 2004 with Revisions through January 2011 (Rev. 4)	1/31/2011
Phase 2 FFSZ Groundwater Investigation Work Plan	6/29/2011

Event	Date
Fifth Annual Effectiveness Report	2/15/2012
Sixth Annual Effectiveness Report	2/15/2012
Fourth Five-Year Review Report	7/2013
Seventh Annual Effectiveness Report	2/21/2014
Eighth Annual Effectiveness Report	2/27/2014
Ninth Annual Effectiveness Report	6/11/2014
Tenth Annual Effectiveness Report	1/12/2015
TCEQ Final Forest and Wetlands Planting Completion Certificates	4/17/2015
Eleventh Annual Effectiveness Report	11/10/15
Twelfth Annual Effectiveness Report	9/6/2016
Phase II Fifty-Foot Sand Zone Groundwater Investigation	3/11/2016
Thirteenth Annual Effectiveness Report	2/19/2018