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**THIRD FIVE-YEAR REVIEW REPORT FOR
MOUAT INDUSTRIES SUPERFUND SITE
STILLWATER COUNTY, MONTANA**



Prepared by

**U.S. Environmental Protection Agency
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7/6/18

Date

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LIST OF ABBREVIATIONS & ACRONYMS

AMC	Anaconda Minerals Company
AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
ARCO	Atlantic Richfield Company
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
EPA	United States Environmental Protection Agency
FMC	FMC Corporation
FYR	Five-Year Review
IC	Institutional Control
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter
MDEQ	Montana Department of Environmental Quality
MCL	Maximum Contaminant Level
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RPM	Remedial Project Manager
TCLP	Toxicity Characteristic Leaching Procedure
UAO	Unilateral Administrative Order
UU/UE	Unlimited Use and Unrestricted Exposure

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 pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the Third FYR for the Mouat Industries Superfund site (the Site). The response actions conducted at this Site were removal actions rather than remedial actions. Therefore, a FYR is not required under Statute or regulation. This policy Five-Year Review is required because the Site is on the National Priorities List and the removal actions left hazardous substances, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure. The triggering action for this policy review is the previous FYR.

The Site consists of one operable unit (OU1), which will be addressed in this FYR. OU1 addresses surface and subsurface soil, surface water and groundwater.

The FYR was led by EPA remedial project manager (RPM) Roger Hoogerheide with support from Sara Alfano and Ryan Burdge of Skéo. The review began on 5/31/2017. Documents reviewed as part of this FYR are included in Appendix A.

Site Background

The Site is located in Stillwater County, Montana, on the south side of the Town of Columbus. Current and projected land uses for the Site and surrounding area are light and heavy industrial uses. The Columbus airstrip is located to the south (Figure 1). Residential areas and a golf course are located south of the airport.

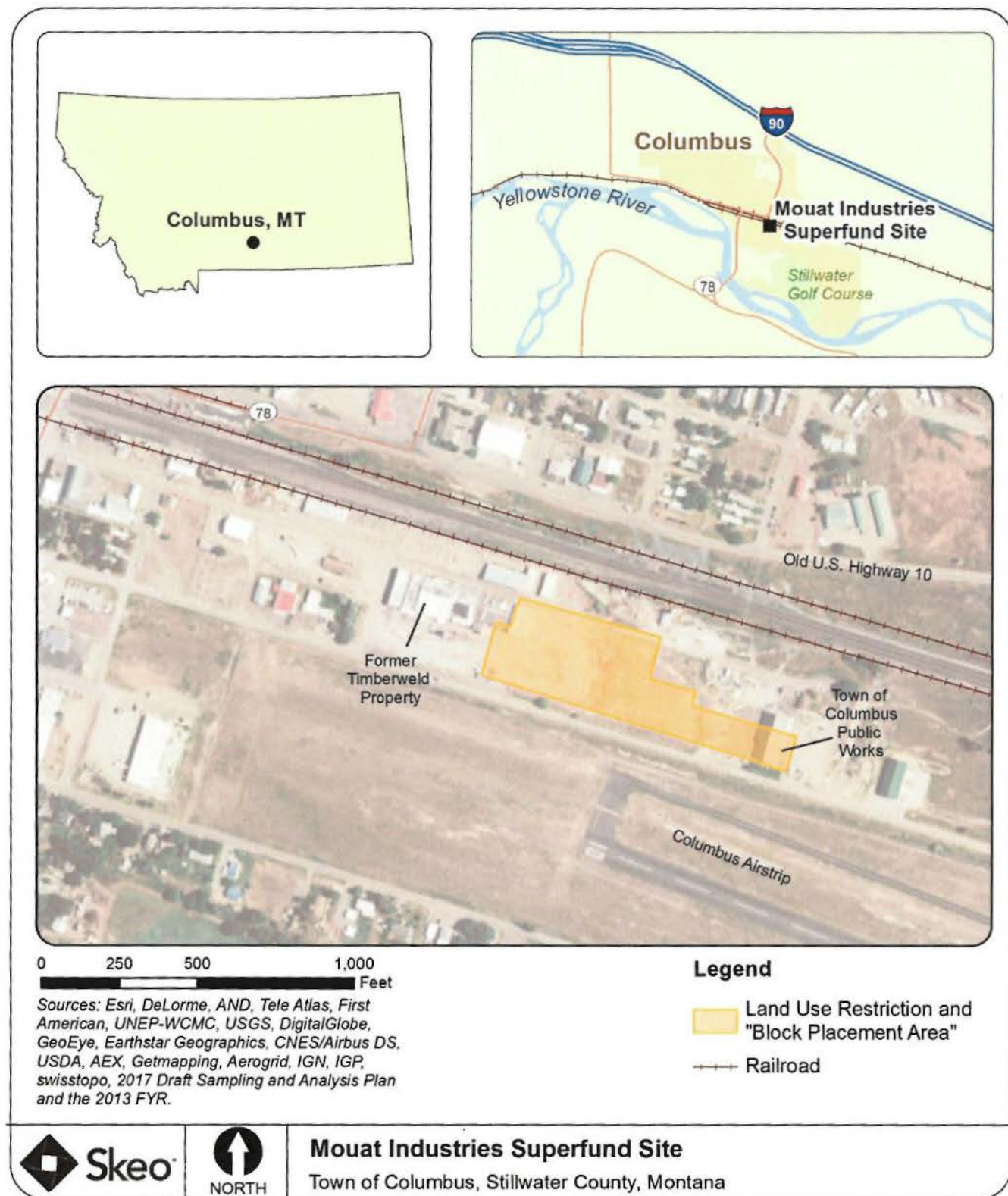
In 1957, Mouat Industries constructed a chromium processing plant at the Site. Various operators leased the Site from the Town until about 1973. Until 1962, site facilities generated sodium sulfate process wastes containing sodium chromate and sodium dichromate. Hexavalent chromium (chromium-6) containing compounds leached from the sodium chromate waste piles into underlying soils and eventually into groundwater. In addition, normal facility operations resulted in sodium dichromate spills. The area of affected soil was an estimated 3.3 acres.

The Town has owned the eastern portion of the Site since 1933. In 1960, the Town acquired the western portion of the Site which was conveyed to Timberweld in 2006. Timberweld, a manufacturer of laminated wood structural elements and composite wood beams, had a facility on the western portion of the site property. Timberweld recently shut down its operations in 2016 and sold all assets. Two individual landowners purchased the western portion of the Site property in 2017. The Town's portion of the Site includes a new public works building and parking lots. The western portion of the Site is surfaced with gravel. Based on conversations with the new property owners, the anticipated future use of these properties is expected to be slab on grade storage sheds with material and equipment possibly being stored outside.

Bedrock underlying the Site ranges between 13 and 35 feet below ground surface. Immediately overlying the shale bedrock are alluvial gravels between approximately 7 and 27 feet. Above the gravel, fine-grained sediments consisting of alluvial clay, silt, and fine sand horizons, typical of floodplain deposits, are encountered. Hydrogeologic investigations at the Site have focused on the alluvial sand and gravel formation. The aquifer appears to be unconfined. However, the overlying fine-grained clay and silt layers may act locally to confine the aquifer. Groundwater flows toward the southeast.

Use of groundwater at the Site is prohibited and municipal water supplies are available to the area. Groundwater downgradient is a potential source of irrigation water for the golf course, crops and nearby lawns. There are no surface water areas or channels on site. The Yellowstone River is located about a half-mile south of the Site. A pond on the local golf course is located between the river and the Site.

Figure 1: Site Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding EPA's response actions at the Site.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Mouat Industries		
EPA ID: MTD021997689		
Region: 8	State: Montana	City/County: Columbus/Stillwater County
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	Has the site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name: Roger Hoogerheide, Sarah Alfano and Ryan Burdge		
Author affiliation: EPA Region 8 and Skeo		
Review period: 5/31/2017 - 4/13/2018		
Date of site inspection: 6/12/2017		
Type of review: Discretionary		
Review number: 3		
Triggering action date: 4/15/2013		
Due date (five years after triggering action date): 4/15/2018		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Site investigations in 1977, 1980, 1983 and 1984 led to the Site's proposal for listing on the National Priorities List (NPL) in 1984. EPA listed the Site on the NPL in 1986. Hazardous substances released at the Site include chromium-6 and chromium-3; sampling found both contaminants above health-based or regulatory levels for soil, surface water and groundwater. A timeline of Site activities is included in Appendix B.

Response Actions

Anaconda Minerals Company (AMC), which acquired Mouat Industries' interests in the buildings and equipment, undertook several voluntary actions between 1969 and 1973 in response to concerns expressed by the Town. These actions included containerization and relocation of wastes and treatment of soils. Demolition of the former processing facility finished in 1974. The former processing plant footprint was covered with approximately 2 feet of gravel.

AMC activities in 1969, 1973 and 1974 isolated wastes from the environment and treated contaminated soils. They included:

- Removing stockpiled chromium salts from the Site yard. A portion of the waste was drummed and relocated to the processing plant building. The remainder of the waste was stored on the concrete floor of the processing plant building. The former location of the material was graded and covered with gravel.
- Removing about 468 tons of material stored inside the building. The material was taken off-site for disposal.
- Excavating and transporting chromium-contaminated soil from the Site for off-site disposal.
- Applying acids and ferrous sulfate to remaining in-place soils and working the reagents into the soil to convert chromium-6 to chromium-3.

1990 Time-Critical Removal Action

EPA issued an action memorandum to initiate a time-critical removal action in 1990 to address the threat of direct contact with hazardous materials by on-site workers and nearby individuals, and provide run-on, run-off drainage control for the Site. In March and April 1990, the EPA Region 8 Emergency Response Branch secured the Site by surrounding it with six-foot-high industrial chain link fencing and the Town re-routed the drainage ditch that had carried storm water through the center of the Site to perimeter locations.

1991 Time-Critical Removal Action

In 1991, EPA issued a second time-critical removal action memorandum selecting on-site treatment of remaining soils as the primary removal alternative with off-site disposal of soils as a backup. Pursuant to a 1991 Administrative Order on Consent (AOC), FMC Corporation (FMC), one of the Site's potentially responsible parties (PRPs) implemented the soil removal action selected under the 1991 Action Memorandum. Excavation of Site soils met a cleanup performance standard established in the 1991 Action Memorandum and was based on the results of Toxicity Characteristic Leaching Procedures (TCLP) performed on Site soils. Soils within the Site fence line were excavated based on a TCLP extract total chromium concentration threshold of 0.5 milligrams per liter (mg/L). Soils outside the fence (largely on Timberweld property) were excavated based on a TCLP extract total chromium concentration threshold of 0.1 mg/L.

Soils were first mixed with a proprietary mixture of acids. Treated soils were then mixed with Portland cement and placed in steel bins to solidify into soil blocks. Approximately 14,000 cubic yards (7000 blocks) were treated and placed in the excavated area as an on-site repository in the first year. Treated soil blocks were placed in the excavated area on-site. In response to the Town's concern about the potential size of the repository, approximately 19,400 cubic yards of soils with chromium levels above cleanup standards were excavated and transported for off-site disposal in 1994. The final cover consisted of gravel on the Timberweld property to allow vehicle access for material lay-down and two feet of soil and a vegetated cover in the fenced area owned by the Town.

1996 Non-Time-Critical Removal Action

EPA issued a 1996 Action Memorandum for a non-time-critical removal action for remaining areas of environmental concern:

- *Surface and Subsurface Soil:* Land use restrictions required. No further action needed due to previously completed excavation and treatment of soil and land use restrictions. The Town is a PRP and is responsible for issuing and maintaining institutional controls.
- *Surface Water:* The 1996 Action Memorandum identified surface water performance standards for the golf course pond and ditches as a result of contaminated groundwater discharges to surface water. Monitoring determined the applicable or relevant and appropriate requirements (ARARs) have been met and no further action is needed.
- *Groundwater:* Natural attenuation, groundwater monitoring and institutional controls (ICs) to limit public exposure to contaminated groundwater required. Federal maximum contaminant level (MCL) for chromium of 100 micrograms per liter (µg/L) identified as ARAR. The Action Memorandum indicated

the Monitoring Plan Well Network monitoring was anticipated to be performed by the PRPs, under an appropriate Administrative Order.

2008 Amendment to the June 21, 1996 Action Memorandum

EPA amended the 1996 Action Memorandum to clarify the points of compliance for groundwater at the Site and that the restriction on groundwater use in the block placement area will be maintained as long as ICs are necessary (through the modification in the Town of Columbus' Superfund Overlay District Ordinance). It also clarified that groundwater monitoring will continue as long as waste remains in place, but that the frequency of monitoring may be modified based on monitoring results, and stated that the Montana Department of Environmental Quality (MDEQ) and EPA will prepare a Post Removal Site Control Plan pursuant to Section 300.415(1)(3) of the NCP.

Status of Implementation

In 1993, FMC implemented the soil removal action selected under the 1991 Action Memorandum. The 1996 Action Memorandum provided supplemental documentation of previous removal actions at the Site and included a non-time-critical removal action for groundwater. Pursuant to the 1996 UAO, Atlantic Richfield Company (ARCO) began formal implementation of the removal action described in the 1996 Action Memorandum. In 2009, EPA and MDEQ determined that all appropriate actions had been completed on the surface and subsurface soils component of the Site. Therefore, EPA deleted the surface and subsurface soils component from the NPL. The Post Removal Site Control Plan was completed in 2009 and modified in 2013.

Annual groundwater monitoring began in 1996 and was temporarily suspended in 2002 when groundwater performance standards were met. Annual monitoring resumed in 2008 and continued through 2015. Sampling was again conducted in 2017 in support of this FYR.

ICs Summary

The 1996 Action Memorandum and UAO required ICs restricting land use and groundwater use. They included restrictions to:

- Prohibit excavation into blocks of treated soils.
- Limit vehicle loads on gravel-covered portions of the on-site repository (also referred to as the block placement area).
- Prohibit any use of the soil-covered block placement area unless those areas are paved or covered with gravel.
- Require the property owner to maintain the site cover, drainage facilities and fences.
- Establish specifications for construction on the block placement area.
- Put groundwater use restrictions in place.

ICs have been in place since 1995, when the Town approved a zoning ordinance and Superfund Overlay District, which cannot be modified without prior approval from EPA (see Appendix C for Town map). Land use restrictions apply only to the block placement areas and surrounding protective buffer areas. An EPA-approved 2008 modification to the ordinance lifted the groundwater use restriction, except in the block placement area and extended to the compliance wells. The modified ordinance also allowed for removal of fences around the soil cover areas, since fences were no longer deemed necessary. However, the property owners must maintain the vegetated soil cover or gravel cover on their property that is above the areas where treated soils were placed on site (Figure 2). In addition, the 2008 ordinance added that building construction is allowed within the block placement area and excavation required for this construction and trenching for utilities is allowed as long as the waste excavated is placed back into the trenches once work is completed and the Site does not allow for unlimited use/unrestricted exposure. The ordinance is included in Appendix H.

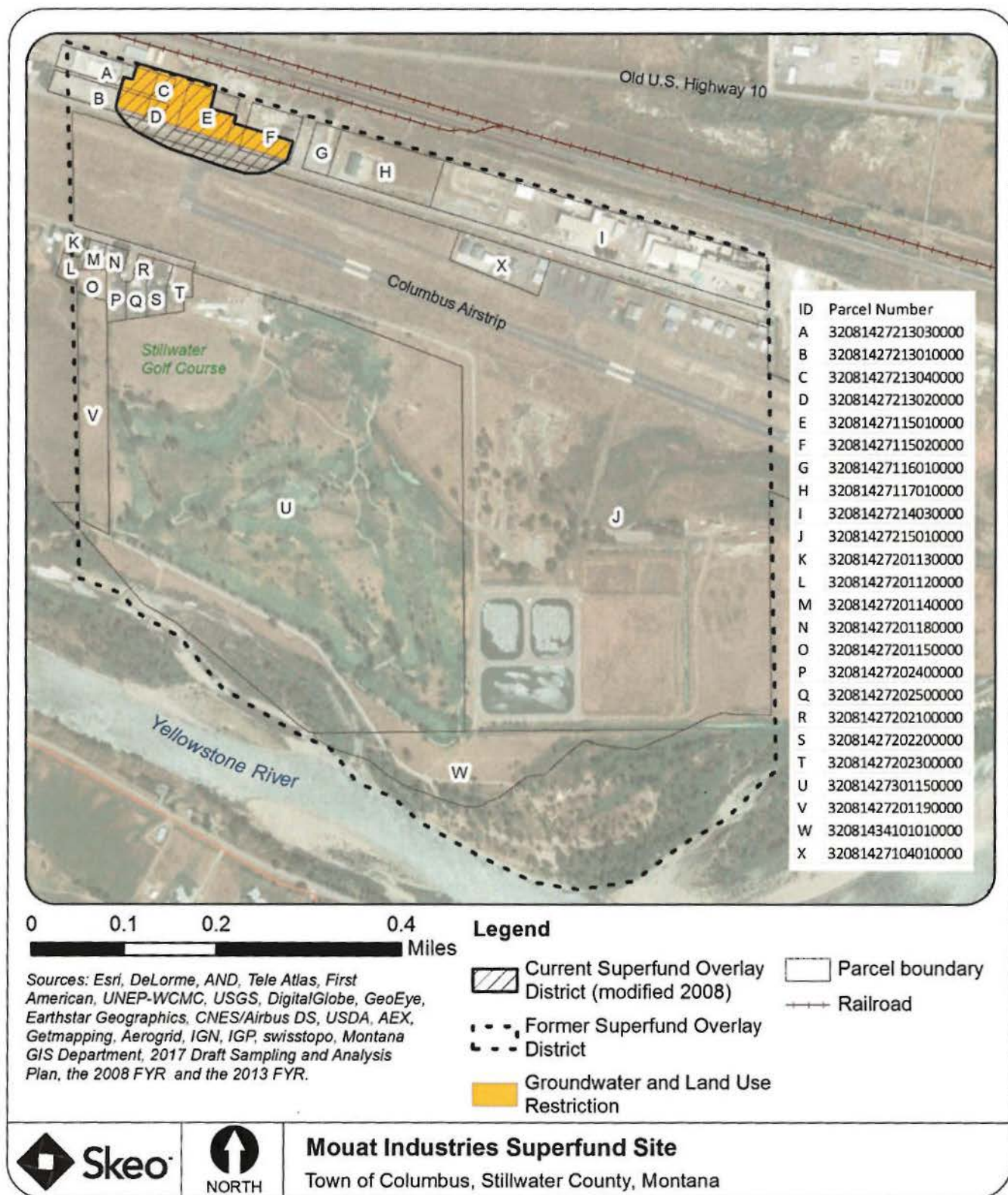
The Town agreed to implement and enforce the ICs at the Site and placed a warranty deed¹ on the Timberweld property to denote that portions of the property are subject to the land use restrictions stated in the Overlay District ordinance. In addition, EPA and the Town have communicated with recent purchasers of the former Timberweld property to ensure that they are aware of and have copies of the restrictions. The anticipated property uses are not expected to affect the gravel cover. Table 1 summarizes ICs at the Site.

Table 1: Summary of Planned and/or Implemented 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)	IC Objective	Title of IC Instrument Implemented and Date
Groundwater	Yes	Yes	32081427213030000 32081427213010000 32081427213040000 32081427213020000 32081427115010000 32081427115020000 See Figure 2	Limitations on groundwater use	Superfund Overlay District, as implemented in Town Ordinance No. 336 (Appendix H). The 2008 modification to the Superfund Overlay District removed groundwater use restrictions, except in the block placement area and extending to the compliance wells.
Soil	Yes	Yes	32081427213030000 32081427213010000 32081427213040000 32081427213020000 32081427115010000 32081427115020000 See Figure 2	Establishes specifications for construction and specifies that the property owner is required to maintain the site cover, drainage facilities and fences placed on-site	Superfund Overlay District, as implemented in Town Ordinance No. 336

¹ A warranty deed is a type of deed where the grantor (seller) guarantees that he or she holds clear title to a piece of real estate and has a right to sell it to the grantee (buyer).

Figure 2: IC Map



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Systems Operations/Operation & Maintenance (O&M)

All response actions at the Site were conducted as removal actions. Therefore, activities that would be considered O&M activities at a site where remedial actions are conducted are instead conducted as post-removal site control at the Site. Post-removal site control activities currently conducted at the Site include the Town's monitoring and maintenance of the vegetative and gravel soil covers, monitoring and maintenance and enforcement of the ICs, groundwater monitoring and periodic evaluation of ICs, and FYRs.

The 2013 Amended Post Removal Site Control Plan was developed to comply with the amended 1996 non-time-critical removal action groundwater requirements. It updated activities since the original plan and modified the groundwater monitoring network. The plan identified four monitoring wells located next to and in the block placement area that will be monitored. The objective of annual sampling of source area wells is to monitor groundwater quality impacts from the treated soil cement blocks as the blocks degrade over time and determine if remaining chromium will create a groundwater plume in the future.

III. PROGRESS SINCE THE PREVIOUS FYR

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the previous FYR and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2013 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Short-term Protective	The response actions implemented at OU1 currently protect human health and the environment because all caps are still intact, which is protective of human health and the environment in the short-term. Even though the Town has conducted some recent activities that are inconsistent with the ICs, these actions do not impact short-term protectiveness because the blocks excavated were replaced on Town property within the block placement area and this issue is easily remedied. However, in order for the response actions to be protective in the long-term, the following actions need to be taken: the Post Removal Site Control Plan needs to be modified; and the EPA and MDEQ need to ensure that the Town operates, maintains, and enforces the zoning ordinance that implements the ICs for the Site to ensure protectiveness.
Sitewide	Short-term Protective	Because the response actions at all OUs are protective, the Site is protective of human health and the environment.

Table 3: Status of Recommendations from the 2013 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
1	Excavated waste blocks were placed into a non-waste block area (utility corridor), which is inconsistent with the IC.	Clarify whether the blocks are solid or hazardous waste and develop proper procedures for handling and disposing of any excavated blocks to ensure blocks are handled in accordance with RCRA, CERCLA and Montana disposal requirements.	Completed	A temporary excavation of the waste blocks took place during construction of the public works building. EPA subsequently worked with the Town regarding waste placement and future adherence to the ICs. Currently, all waste blocks are covered.	12/2/2016
1	The vegetative cover, gravel and asphalt caps do not have a formalized inspection and maintenance plan.	Modify the Post Removal Site Control Plan to clearly outline scheduled inspection and maintenance responsibilities for the vegetative cover, gravel and asphalt caps. These actions should be written to assure compliance with institutional controls.	Completed	Town Ordinance No. 336 states the property owner must maintain the vegetated soil cover or gravel cover on the Site. EPA will update the Post Removal Site Control Plan, as needed.	10/21/2013
1	Soil and gravel covers constructed have not been maintained to prevent degradation. Block areas with a vegetated soil cover are being utilized as an equipment and vehicular storage area and soil and gravel are stockpiled. In addition, damage from vehicles and other means was evident and unrepaired.	The Town will regrade the cover to facilitate runoff and maintenance. Surplus equipment, vehicles, soil and gravel will be taken off the cap. Once completed, the area will be reseeded, EPA and MDEQ will be notified, and an inspection will be conducted.	Completed	The cover areas are maintained and have been regraded and vegetation is established. The vegetated soil cover area is no longer being utilized as a storage area.	9/6/2013
1	Monitoring wells used to monitor the completed response action have not been abandoned. Some of these wells are damaged and may act as surface water conduits.	Abandon all monitoring wells not included in the post closure monitoring.	Completed	Ten wells not used for Site monitoring have been abandoned.	9/17/2015

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was made available by a newspaper posting in the *Stillwater County News*, on 6/22/2017 and in the *Billings Gazette* on 6/21/2017. It stated that the FYR was underway and invited the public to submit any comments to EPA. The results of the review and the report will be made available at the Site's information repository, Stillwater County Library, located at 27 North 4th Street in Columbus, Montana.

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

Daryl Reed, MDEQ – Mr. Reed's overall impression of the cleanup is mostly positive. He noted that since the removal action and repository construction, the project has been mostly successful in reducing the chromium in groundwater, establishing an effective groundwater monitoring program and allowing site redevelopment to proceed.

Ted Duaime, Montana Bureau of Mines and Geology – Mr. Duaime has a positive overall impression of the cleanup. He noted there are still groundwater issues on site and possibly off site during certain periods.

Dennis Holten, Town of Columbus Public Works – Mr. Holten stated that it is disappointing that time, effort and millions of dollars were spent on the remedial activities when the contaminated soil could have been hauled to a hazardous waste facility.

FMC Corporation – FMC stated the remedy is performing as designed and that FMC is unaware of any current environmental effects. FMC noted that the community has been reusing the Site since completion of cleanup.

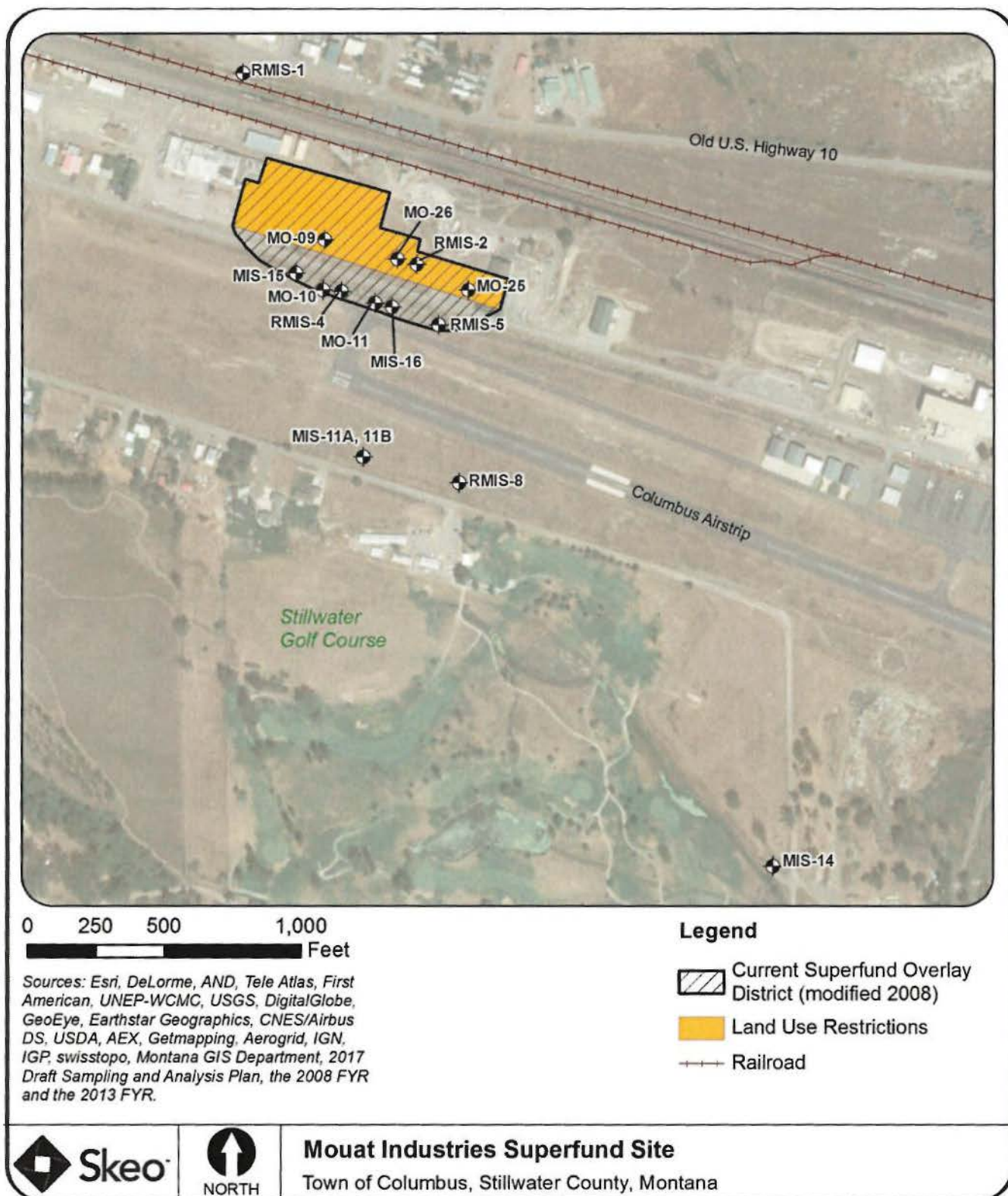
Data Review

This FYR includes a review of 2013, 2014, 2015 and 2017 groundwater monitoring data. The objective of annual sampling of source area wells is to monitor groundwater quality impacts from the treated soil cement blocks as the blocks degrade over time and determine if remaining chromium will create a groundwater plume in the future. Ten wells located downgradient of the source area are also monitored as part of the monitoring well network.

Groundwater concentrations are compared to the trigger values for the Site of three times the MCLs in the source area and/or half of the MCLs downgradient, as required by the Post Removal Site Control Plan. The plan states that annual exceedance of the trigger values requires more frequent (semiannual) monitoring. Trigger values for chromium are as follows:

- Background: > 25 µg/L
- Block Placement Area: > 300 µg/L (3 times the MCL)
- Downgradient well: > 50 µg/L (1/2 the MCL)

Figure 3. Groundwater Monitoring Network



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Table 4 includes monitoring results from 2013, 2014, 2015 and 2017. The trigger value was exceeded in the total recoverable sample collected from block area well MO-25 during the September 2013 annual sampling trip, which triggered more frequent sampling beginning in 2014. During the June 2014 sampling, trigger values were exceeded in samples from one block area well (MO-25) and two downgradient wells (MO-10 and MO-11). Exceeding the trigger values in June 2014 necessitated biennial sampling, which took place in early October 2014. All other chromium concentrations from all other wells were well below the trigger values. The highest chromium concentrations in the most downgradient well (MIS-11A) were 35.98 µg/L (total recoverable chromium) and 33.72 µg/L (dissolved chromium). During the July 2015 sampling, the trigger value was exceeded in MO-25 and one downgradient well (MO-10) which necessitated biennial sampling in September 2015. No well exceeded the trigger values during the September sampling event.

Table 4: Groundwater Monitoring Results

Wells	Date	Trigger Value (µg/L)	Dissolved Chromium (µg/L)	Total Recoverable Chromium (µg/L)
Background Wells				
RMIS-1	9/10/2013	>25	0.900 J	<0.500 U
RMIS-1	6/16/2014	>25	2.51	2.66
RMIS-1	6/16/2014	>25	2.33	3.07
RMIS-1	7/2/2015	>25	1.42	2.25
RMIS-1 (DUP)	7/2/2015	>25	1.61	2.39
RMIS-1	6/12/2017	>25	<10.0 U	27.4
Block Area Wells				
MO-09	9/10/2013	>300	2.73	44.77
MO-09	2/13/2014	>300	3.64	14.13
MO-09	6/17/2014	>300	4.98	16.46
MO-09	10/9/2014	>300	2.94	34.93
MO-09	7/1/2015	>300	3.16	13.97
MO-09	9/24/2015	>300	1.66	34.07
MO-09	6/12/2017	>300	<10.0 U	24.7
MO-25	9/10/2013	>300	286.92	320.2
MO-25	2/12/2014	>300	267.81	268.54
MO-25	6/16/2014	>300	464.32	479.33
MO-25	10/9/2014	>300	273.38	309.22
MO-25	7/1/2015	>300	369.96	367.84
MO-25 (Dup)	7/1/2015	>300	368.55	422.6
MO-25	9/24/2015	>300	256.8	265.88
MO-25	6/12/2017	>300	459	460
MO-26	9/10/2013	>300	7.35	9.05
MO-26	2/13/2014	>300	9.88	11.09
MO-26	6/18/2014	>300	6.53	7.21
MO-26	10/9/2014	>300	8.43	8.79
MO-26 (Dup)	10/9/2014	>300	8.91	8.74
MO-26	7/1/2015	>300	8.61	10.14

Wells	Date	Trigger Value (µg/L)	Dissolved Chromium (µg/L)	Total Recoverable Chromium (µg/L)
MO-26	9/24/2015	>300	6.15	8.77
MO-26	6/12/2017	>300	116	114
RMIS-2	9/10/2013	>300	21.44	27.4
RMIS-2	2/13/2014	>300	16.93	17.73
RMIS-2 (Dup)	2/13/2014	>300	16.02	17.62
RMIS-2	6/18/2014	>300	30.64	35.02
RMIS-2	10/10/2014	>300	12.32	13.73
RMIS-2	7/1/2015	>300	34.67	34.81
RMIS-2	9/24/2015	>300	21.42	24.43
RMIS-2	6/12/2017	>300	58.6	57.7
Downgradient Wells				
MO-10	9/10/2013	>50	23.66	31
MO-10	2/11/2014	>50	30.59	32.05
MO-10	6/16/2014	>50	53.53	57.92
MO-10	10/9/2014	>50	25.11	27.24
MO-10	7/1/2015	>50	54.99	53.12
MO-10	9/24/2015	>50	22.98	23.73
MO-10	6/12/2017	>50	46.2	33.3
MO-11	9/10/2013	>50	1.800 J	20.45
MO-11	2/12/2014	>50	2.200 J	8.16
MO-11	6/16/2014	>50	4.71	221.62
MO-11	10/9/2014	>50	3.5	29.81
MO-11	7/1/2015	>50	< 1.00 U	19.91
MO-11	9/24/2015	>50	2.55J	2.92
MO-11	6/12/2017	>50	10.8 J	32.5
MIS-8B	2/12/2014	>50	20.15	19.65
MIS-11A	9/10/2013	>50	24.42	27.05
MIS-11A	2/12/2014	>50	28.9	29.28
MIS-11A	6/17/2014	>50	35.27	36.34
MIS-11A	10/7/2014	>50	33.72	35.98
MIS-11A	7/1/2015	>50	30.83	29.99
MIS-11A	9/23/2015	>50	33.77	38.1
MIS-11B	9/10/2013	>50	19.25	21.51
MIS-11B	2/12/2014	>50	23.82	24.04
MIS-11B	6/17/2014	>50	24.01	24.34
MIS-11B	10/7/2014	>50	25.04	26.76
MIS-11B	7/1/2015	>50	25.2	24.25
MIS-11B	9/23/2015	>50	25.69	28.97
MIS-11B	6/12/2017	>50	24.9	22.5
MIS-14	9/10/2013	>50	7.44	8.3

Wells	Date	Trigger Value (µg/L)	Dissolved Chromium (µg/L)	Total Recoverable Chromium (µg/L)
MIS-14 (Dup)	9/10/2013	>50	7.4	8.56
MIS-14	2/12/2014	>50	12.25	12.02
MIS-14	6/17/2014	>50	10.51	10.63
MIS-14 (Dup)	6/17/2014	>50	10.21	10.67
MIS-14	10/7/2014	>50	6.13	6.78
MIS-14 (Dup)	10/7/2014	>50	5.79	6.46
MIS-14	6/30/2015	>50	10.4	10.32
MIS-14	9/23/2015	>50	7.34	8.1
MIS-14	6/12/2017	>50	25.5	10.5 J
MIS-14 (Dup)	6/12/2017	>50	11.4 J	10.7 J
MIS-15*	9/10/2013	>50	8.15	10.9
MIS-15	2/11/2014	>50	9.79	10.01
MIS-15 (Dup)	2/11/2014	>50	9.95	10.31
MIS-15	6/16/2014	>50	9.23	10.25
MIS-15	10/8/2014	>50	8.62	9.5
MIS-15	6/30/2015	>50	9.77	11.83
MIS-15	9/24/2015	>50	8.1	9.18
MIS-15	6/12/2017	>50	13.0 J	<10.0 U
MIS-16*	9/10/2013	>50	7.35	8.58
MIS-16 (Dup)	9/10/2013	>50	7.52	8.47
MIS-16	2/11/2014	>50	10.57	9.87
MIS-16	6/16/2014	>50	10.81	11.95
MIS-16	10/8/2014	>50	9.43	9.98
MIS-16	7/1/2015	>50	7.14	7.52
MIS-16	9/24/2015	>50	11.6	12.86
MIS-16	6/12/2017	>50	14.2 J	12.4 J
MIS-16 (Dup)	6/12/2017	>50	11.7 J	11.8 J
RMIS-4*	9/10/2013	>50	12.02	16.7
RMIS-4	2/11/2014	>50	16.53	15.48
RMIS-4	6/16/2014	>50	22.45	21.42
RMIS-4	10/8/2014	>50	12.32	14.11
RMIS-4	7/1/2015	>50	11.97	11.75
RMIS-4	9/23/2015	>50	12.33	15.45
RMIS-4	6/12/2017	>50	27.3	26.8
RMIS-5*	9/10/2013	>50	9.94	10.82
RMIS-5	2/11/2014	>50	15.35	14.27
RMIS-5	6/16/2014	>50	15.56	17.85
RMIS-5	10/8/2014	>50	15.4	17.77
RMIS-5	7/1/2015	>50	25.18	24.14
RMIS-5	9/23/2015	>50	24.63	25.49

Wells	Date	Trigger Value (µg/L)	Dissolved Chromium (µg/L)	Total Recoverable Chromium (µg/L)
RMIS-5	6/12/2017	>50	31.3	39.3
RMIS-8	9/10/2013	>50	11.59	13.04
RMIS-8	6/17/2014	>50	17.7	18.81
RMIS-8	10/7/2014	>50	18.9	20.85
RMIS-8	6/30/2015	>50	20.41	18.39
RMIS-8	9/23/2015	>50	20.55	22.69
RMIS-8	6/12/2017	>50	21.6	20.4
Notes: * = Compliance wells J = Estimated concentration U = Concentration below detection limit Dup = Duplicate Bold = Exceeds trigger value				

In 2015, the concentrations in MO-25 again exceeded the trigger value for both dissolved and total recoverable chromium concentrations and it exceeded it again during the 2017 round of sampling. Well MO-25 is the only well that regularly exceeds the trigger level. The highest concentrations occur in June, which corresponds to periods of rising groundwater levels. Concentrations are often high in the block area during recharge events. Previously, MDEQ staff had indicated it could be worth considering raising the 300 µg/L trigger value to a higher concentration. This is because the hydrogeology shows that even if there are high concentrations in the source wells, there are not high concentrations downgradient in the compliance wells (MIS-15, MIS-16, RMIS-4 and RMIS-5). EPA is proposing to modify the contingency trigger values, in consultation with MDEQ, as part of a revision to the PRSC Plan that is expected to be completed a couple of months after the issuance of this FYR.

Site Inspection

The Site inspection took place on 6/12/2017. In attendance were EPA RPM Roger Hoogerheide and Sarah Alfano and Ryan Burdge from EPA contractor Skeo. The purpose of the inspection was to assess the protectiveness of the response actions. The site inspection checklist and photos are included in Appendices D and F.

Site inspection participants met at the Columbus public works building, located on site. Dennis Holten, the Town's Director of Public Works, participated in a walk of the capped area on the public works property and along adjacent parcels to the west. No issues related to the capped areas were noted during the inspection. The vegetation was well established and monitoring wells were not damaged. The recent transfer of the former Timberweld property was discussed. EPA and the Town's Public Works Department are in communication with the new owners regarding development restrictions and anticipated property use. The participants then inspected the downgradient wells at the airport property. Located wells were in good condition. Monitoring well MIS-11A could not be located by the inspection team or the 2017 sampling teams. No other issues were noted during the inspection.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Yes, the review of documents, ARARs and ICs and the results of the Site inspection indicate that the response actions for the block area are functioning as intended. All removal actions called for in the Action Memorandums have been completed. The soils removal action, which addressed the source of contamination, was considered

complete in 1995 through the issuance of a Final Closeout Report. EPA deleted the surface and subsurface soils component of the Site from the NPL in 2009.

Groundwater monitoring data show that the response actions continue to maintain groundwater protectiveness. Chromium concentrations in block area monitoring well MO-25 continue to exceed the trigger value of 300 µg/L, particularly during high-water times of the year. However, the chromium is quickly dispersed, diluted and/or attenuated in the highly transmissive aquifer, as evidenced by the chromium concentrations of less than half of the MCL in the four nearest downgradient wells. No exceedances of downgradient trigger values (½ the MCL) were detected except two samples in June 2014 from MO-10 and MO-11 and one sample (MO-10) in 2015. EPA is currently revising the trigger values as part of a revised PRSC Plan.

ICs have been established by the Town through a zoning ordinance and Superfund Overlay District that restrict use of groundwater and disturbance of soil in the block waste area. The Town has agreed to implement and enforce ICs at the Site and also placed a deed notice on the former Timberweld property to denote that the property is within the Overlay District. EPA has communicated with recent purchasers of the former Timberweld property to ensure they are aware of and have copies of the restrictions. The warranty deeds that were conveyed with the Timberweld properties are also subject to provisions contained in the January 17, 2006 warranty deeds. The ICs also require that the Town maintain the vegetative cap and drainage features on this property and that the owners of the former Timberweld property maintain the gravel cover in the block placement area defined in Town Ordinance No. 336. A meeting was also held with the Mayor and City Commissioners in March 2018 to discuss ICs to reinforce the Town's responsibilities.

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?

Yes, the exposure assumptions, toxicity data, cleanup levels and objectives for the response actions used at the time of the response action selection are still valid. Excavation of Site soils was based on the results of TCLP performed on Site soils. Treated waste blocks are covered with clean fill and gravel, eliminating potential direct exposures. The current federal and state MCL remain unchanged from the ARARs identified in the 1996 Action Memorandum (100 µg/L Cr).

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

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

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the FYR:
OU1

OTHER FINDINGS

The following issues were identified during the FYR; however, they do not affect current and/or future protectiveness:

- *The groundwater monitoring requirements in the Post Removal Site Control are not being consistently implemented. EPA, in consultation with DEQ, will revise the monitoring requirements in the Post Removal Site Control Plan and issue a Revised PRSCP.*
- *Though Town Ordinance No. 336 states the property owner must maintain the vegetated soil cover or gravel cover on the Site, EPA is updating the Post Removal Site Control Plan outlining scheduled inspection and maintenance responsibilities for caps as necessary.*
- *Monitoring well MS-11A could not be located.*

VII. PROTECTIVENESS STATEMENT

Sitewide Protectiveness Statement	
<i>Protectiveness Determination:</i> Protective	<i>Planned Addendum Completion Date:</i> Click here to enter a date
<i>Protectiveness Statement:</i> The remedy at OU1 is protective of human health and the environment. The repository cap over the treated soils and drainage features around the repository are intact and maintained by the Town of Columbus. While chromium groundwater quality standards have episodic exceedances when groundwater comes into contact with the treated soils underlying the repository, the chromium groundwater standards are consistently met at the Point of Compliance established in the 2008 Action Memorandum. Institutional controls are in place and are being properly operated, maintained and enforced by the Town of Columbus. ICs can also be easily modified through the Superfund Overlay District should future land use require modifications. Because the remedy is protective at all OUs, the site is protective of human health and the environment.	

VIII. NEXT REVIEW

The next FYR Report for the Mouat Industries Superfund site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

1991. Administrative Order for Removal Action. U. S. Environmental Protection Agency. November 20, 1991.

1991. Removal Action Approval. U.S. Environmental Protection Agency. September 5, 1991.

1996. Enforcement/Action Memorandum. Request for Non-Time-Critical Removal Action Approval at Mouat Industries Site, Columbus, Stillwater County, Montana. U.S. Environmental Protection Agency. June 20, 1996.

1996. Unilateral Administrative Order for Conduct of a Non-Time-Critical Removal Action. U.S. Environmental Protection Agency Region 8. July 23, 1996.

2008. Action Memorandum Amendment. Request for an Amendment to the Action Memorandum dated June 21, 1996 for a Non-Time-Critical Removal Action (NTCRA) at the Mouat Industries Superfund Site, Town of Columbus (Town), Montana. U.S. Environmental Protection Agency. June 23, 2008.

2008. First Five-Year Review Report for Mouat Industries National Priorities List Site. Columbus, Montana. U.S. Environmental Protection Agency, Region 8. March 2008.

2013. Post Removal Site Control Plan for Mouat Industries National Priority List Site. Columbus, Stillwater County, Montana. Revision 1. Prepared by U.S. Environmental Protection Agency, Region 8 and Montana Department of Environmental Quality. October 2013.

2013. Second Five-Year Review Report for Mouat Industries Superfund Site. Columbus, Montana. U.S. Environmental Protection Agency Region 8. April 15, 2013.

2014 Groundwater Monitoring Results Final Report. Prepared for Montana Department of Environmental Quality by Gary Icopini/Ted Duime, Hydrogeologists, Montana Bureau of Mines and Geology. December 2014.

2017. Draft Revision 0 Sampling and Analysis Plan/Quality Assurance Project Plan. Mouat Industries Superfund Site. Columbus, Montana. Prepared by TechLaw for U.S. EPA Region 8. May 2017.

2017. Sampling Activities Report. June 2017 Sampling Event, Final. Mouat Industries Superfund Site, Columbus, Montana. United States Environmental Protection Agency, Region 8. Environmental Services Assistance Team. Prepared by Techlaw, Inc. September 2017.

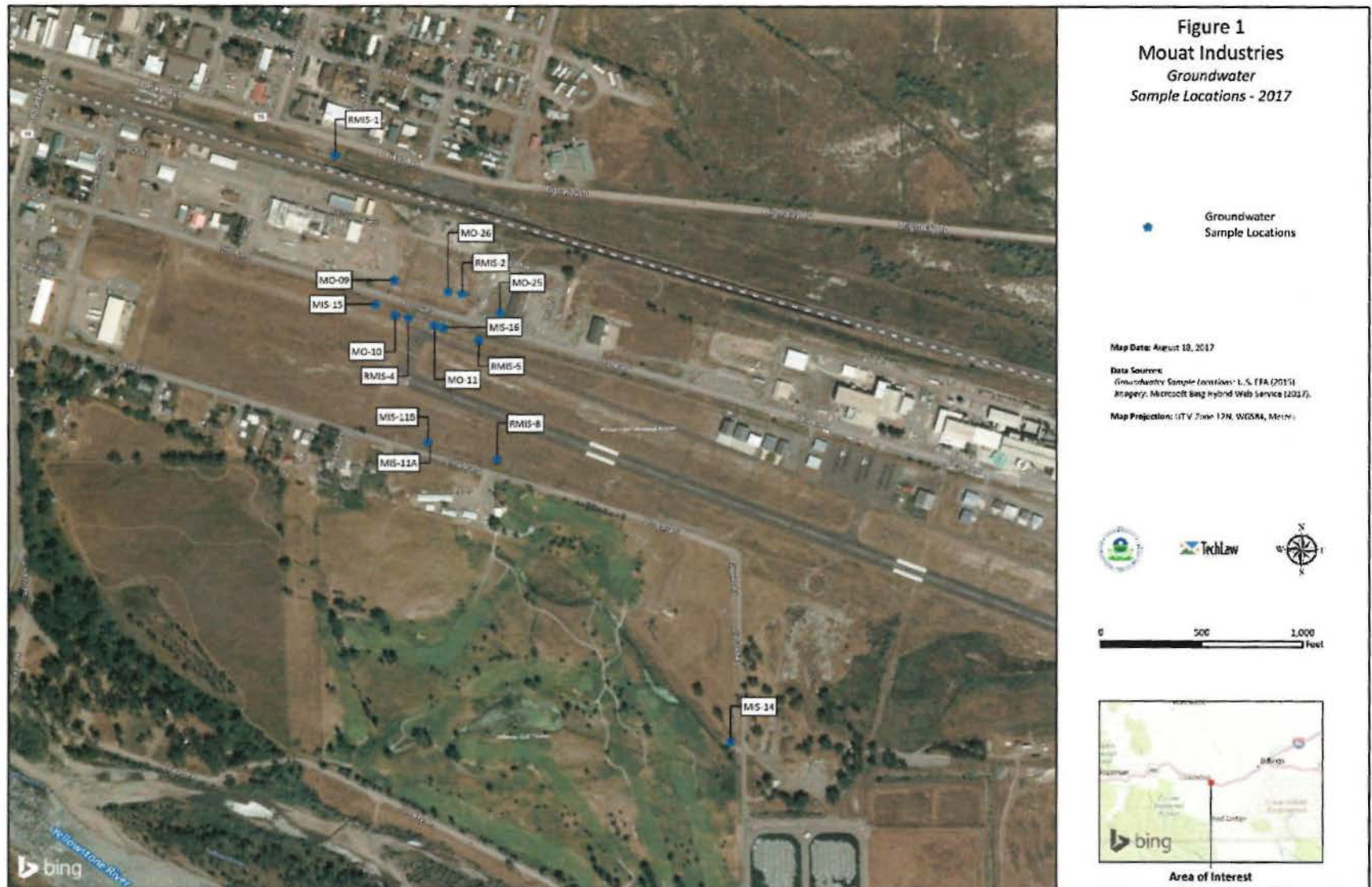
APPENDIX B – SITE CHRONOLOGY

Table B-1: Site Chronology

Event	Date
The Town purchased the eastern portion of the Site.	1933
William G. Mouat and Mouat Industries constructed a chromium processing plant on the Site under a five-year lease agreement with the Town.	1957
The Town extended the Mouat lease through August 6, 1967. Mouat changed operations so that no chromium wastes were created after this time.	1962
The Monte Vista Company purchased the plant and equipment, and received an assignment of Mouat's lease for a portion of the Site.	1963
The Monte Vista Company executed a five-year lease directly with the Town.	1969
In response to Town concerns, AMC collected some waste materials from the Site and placed them inside a building that had been used for sodium dichromate production. The former location of the material was graded and covered with gravel.	1969
In response to Town concerns, AMC rerouted stormwater away from site structures and the yard. In addition, AMC removed material from the Site and treated soils in place.	1973
The Monte Vista Company removed plant equipment, buildings and machinery from the Site.	1974
Timberweld leased space at the Site from the Town and covered the former chromium processing plant footprint with 2 feet of gravel.	1975
Site investigations conducted, including a preliminary assessment/site inspection by EPA.	1977, 1980, 1983, 1984, 1985, 1989 and 1992
EPA sent letter to the Town indicating that the chromium in groundwater exceeded drinking water standards and recommended that the contaminated groundwater not be used for human and animal consumption.	1984
EPA proposed listing the Site on the NPL.	1984
EPA listed the Site on the NPL.	June 1986
Action Memorandum issued requiring a time-critical removal action to secure the Site with fencing and to control stormwater run-on and runoff.	1990
Action Memorandum issued requiring a time-critical removal action to remediate chromium-contaminated soils.	September 1991
UAO issued to several PRPs requiring implementation of the 1991 Action Memorandum.	November 1991
Excavation and treatment of chromium-contaminated soils on site.	1993
Excavation and disposal of chromium-contaminated soils to RCRA-C and RCRA-D permitted off-site facilities.	1994
Superfund Overlay District with groundwater and land use restrictions as ICs adopted as Town of Columbus ordinance.	April 1995
Engineering Evaluation/Cost Analysis Report for groundwater completed.	1996
Human Health and Ecological Risk Assessment completed.	January 1996
Action Memorandum issued for a non-time-critical removal action to address groundwater.	June 1996
UAO issued requiring the implementation of the 1996 Action Memorandum.	July 1996
Preliminary Close-Out Report issued and Site declared construction complete by EPA.	September 1996
Semiannual groundwater monitoring of monitoring plan well network under the 1996 UAO.	November 1996 – October 2002
Chromium concentrations in monitoring wells remain below the MCL of 0.1 mg/L for three consecutive years, thus meeting the performance standards required by the 1996 Action Memorandum.	October 2002
Chromium concentrations in non-network wells within the Superfund Overlay District were below the MCL, as required by the performance standards established in the 1996 Action Memorandum.	December 2003
Final Completion Report issued.	November 2004
Final Site Evaluation Report investigation to determine the potential for chromium-6 to leach from remediated chromium-contaminated soils.	September 2007

Event	Date
EPA completed the first FYR. Town amended Subsections F, G, and H of Superfund Overlay District, allowing for building construction within the block placement area and for excavation within the block placement area, and amended the Superfund Overlay District to reflect the removal of the groundwater use restrictions from the District, "excepting the block placement area."	March 2008
Close-out of UAOs (Docket #VIII-92-05 and VII-96-22).	April 2008
Action Memorandum Amendment to the June 21, 1996 Action Memorandum for the non-time-critical removal action issued.	June 2008
Post Removal Site Control Plan completed.	February 2009
Notice of Partial Deletion from NPL for the soil actions.	March 2009
Building of Town's public works building commenced on the treated block placement area.	August 12, 2011
EPA completed the second FYR.	April 15, 2013
EPA revised the Post-Removal Site Control Plan	August 2013
EPA discontinued annual monitoring of groundwater	2015
Timberweld ceased operations	September, 2016
Timberweld property within site boundaries sold in auction	March, 2017

APPENDIX C – SITE MAPS



APPENDIX D – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST																																																															
I. SITE INFORMATION																																																															
Site Name: <u>Mouat Industries</u>		Date of Inspection: <u>06/12/2017</u>																																																													
Location and Region: <u>Columbus, Montana 8</u>		EPA ID: <u>MTD021997689</u>																																																													
Agency, Office or Company Leading the Five-Year Review: <u>EPA Region 8</u>		Weather/Temperature: <u>80s and sunny</u>																																																													
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other: _____ </td> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table>				<input checked="" type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls																																																										
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached																																																															
II. INTERVIEWS (check all that apply)																																																															
1. O&M Site Manager <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Name _____</td> <td style="width: 30%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;"></td> </tr> <tr> <td colspan="4">Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____</td> </tr> <tr> <td colspan="4">Problems, suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table>				Name _____	Title _____	Date _____		Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____				Problems, suggestions <input type="checkbox"/> Report attached: _____																																																			
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3. 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). Fill in all that apply. <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Contact _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone No. _____</td> </tr> <tr> <td colspan="6">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Contact _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone No. _____</td> </tr> <tr> <td colspan="6">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Contact _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone No. _____</td> </tr> <tr> <td colspan="6">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Contact _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone No. _____</td> </tr> <tr> <td colspan="6">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Contact _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone No. _____</td> </tr> <tr> <td colspan="6">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table>				Agency _____	Contact _____	Name _____	Title _____	Date _____	Phone No. _____	Problems/suggestions <input type="checkbox"/> Report attached: _____						Agency _____	Contact _____	Name _____	Title _____	Date _____	Phone No. _____	Problems/suggestions <input type="checkbox"/> Report attached: _____						Agency _____	Contact _____	Name _____	Title _____	Date _____	Phone No. _____	Problems/suggestions <input type="checkbox"/> Report attached: _____						Agency _____	Contact _____	Name _____	Title _____	Date _____	Phone No. _____	Problems/suggestions <input type="checkbox"/> Report attached: _____						Agency _____	Contact _____	Name _____	Title _____	Date _____	Phone No. _____	Problems/suggestions <input type="checkbox"/> Report attached: _____					
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Name	Title	Date	Phone No.
Problems/suggestions <input type="checkbox"/> Report attached: _____			
4. Other Interviews (optional) <input type="checkbox"/> Report attached: _____			
Other interviews discussed:			
Dennis Holten, Director of Public Works			
Ted Duaime, Montana Bureau of Mines and Geology			
Shawn Tollin, FMC			
Daryl Reed, MDEQ			
III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)			
1. O&M Documents			
<input type="checkbox"/> O&M manual	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> As-built drawings	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Maintenance logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____			
2. Site-Specific Health and Safety Plan			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	
<input type="checkbox"/> Contingency plan/emergency response plan	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____			
3. O&M and OSHA Training Records			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	
Remarks: _____			
4. Permits and Service Agreements			
<input type="checkbox"/> Air discharge permit	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Effluent discharge	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Waste disposal, POTW	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Other permits: _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____			
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"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A

Remarks: _____																																											
10.	Daily Access/Security Logs	<input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A																																									
Remarks: _____																																											
IV. O&M COSTS																																											
1.	O&M Organization <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> State in-house <input type="checkbox"/> PRP in-house <input type="checkbox"/> Federal facility in-house <input checked="" type="checkbox"/> <u>Contractor for EPA</u> </div> <div> <input type="checkbox"/> Contractor for state <input type="checkbox"/> Contractor for PRP <input type="checkbox"/> Contractor for Federal facility </div> </div>																																										
2.	O&M Cost Records <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate: _____ </div> <div> <input type="checkbox"/> Up to date <input type="checkbox"/> Unavailable <input type="checkbox"/> Breakdown attached </div> </div> <p style="text-align: center; margin-top: 10px;">Total annual cost by year for review period if available</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">From: <u>01/01/2013</u></td> <td style="width: 25%;">To: <u>12/31/2013</u></td> <td style="width: 25%; text-align: center;"><u>\$20,000</u></td> <td style="width: 25%;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From: <u>01/01/2014</u></td> <td>To: <u>12/31/2014</u></td> <td style="text-align: center;"><u>\$20,000</u></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From: <u>01/01/2015</u></td> <td>To: <u>12/31/2015</u></td> <td style="text-align: center;"><u>\$0.00</u></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From: <u>01/01/2016</u></td> <td>To: <u>12/31/2016</u></td> <td style="text-align: center;"><u>\$0.00</u></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From: <u>01/01/2017</u></td> <td>To: <u>12/31/2017</u></td> <td style="text-align: center;"><u>\$20,000</u></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> </table>			From: <u>01/01/2013</u>	To: <u>12/31/2013</u>	<u>\$20,000</u>	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From: <u>01/01/2014</u>	To: <u>12/31/2014</u>	<u>\$20,000</u>	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From: <u>01/01/2015</u>	To: <u>12/31/2015</u>	<u>\$0.00</u>	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From: <u>01/01/2016</u>	To: <u>12/31/2016</u>	<u>\$0.00</u>	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From: <u>01/01/2017</u>	To: <u>12/31/2017</u>	<u>\$20,000</u>	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost	
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3.	Unanticipated or Unusually High O&M Costs during Review Period Describe costs and reasons: _____																																										
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A																																											
A. Fencing																																											
1.	Fencing Damaged <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Gates secured <input type="checkbox"/> N/A Remarks: _____																																										
B. Other Access Restrictions																																											
1.	Signs and Other Security Measures <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A Remarks: _____																																										
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>Daily use by Town</u>			
Frequency: <u>Daily</u>			
Responsible party/agency: <u>EPA</u>			
Contact _____	_____	_____	_____
Name	Title	Date	Phone no.
Reporting is up to date	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Reports are verified by the lead agency	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Other problems or suggestions: <input type="checkbox"/> Report attached			
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: _____			
2. Land Use Changes On Site <input type="checkbox"/> N/A			
Remarks: <u>Property recently sold. No new reuse yet.</u>			
3. Land Use Changes Off Site <input checked="" type="checkbox"/> N/A			
Remarks: _____			
VI. GENERAL SITE CONDITIONS			
A. Roads <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1. Roads Damaged <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N/A			
Remarks: _____			
B. Other Site Conditions			
Remarks: _____			
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			
Aerial extent: _____		Depth: _____	
Remarks: _____			
2. Cracks <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Cracking not evident			
Lengths: _____		Depths: _____	
Widths: _____			
Remarks: _____			

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Erosion not evident
	Arial extent: _____		Depth: _____
	Remarks: _____		
4.	Holes	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Holes not evident
	Arial extent: _____		Depth: _____
	Remarks: _____		
5.	Vegetative Cover	<input checked="" type="checkbox"/> Grass	<input checked="" type="checkbox"/> Cover properly established
	<input checked="" type="checkbox"/> No signs of stress	<input type="checkbox"/> Trees/shrubs (indicate size and locations on a diagram)	
	Remarks: _____		
6.	Alternative Cover (e.g., armored rock, concrete)	<input checked="" type="checkbox"/> N/A	
	Remarks: _____		
7.	Bulges	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Bulges not evident
	Arial extent: _____		Height: _____
	Remarks: _____		
8.	Wet Areas/Water Damage	<input checked="" type="checkbox"/> Wet areas/water damage not evident	
	<input type="checkbox"/> Wet areas	<input type="checkbox"/> Location shown on site map	Arial extent: _____
	<input type="checkbox"/> Ponding	<input type="checkbox"/> Location shown on site map	Arial extent: _____
	<input type="checkbox"/> Seeps	<input type="checkbox"/> Location shown on site map	Arial extent: _____
	<input type="checkbox"/> Soft subgrade	<input type="checkbox"/> Location shown on site map	Arial extent: _____
	Remarks: _____		
9.	Slope Instability	<input type="checkbox"/> Slides	<input type="checkbox"/> Location shown on site map
	<input checked="" type="checkbox"/> No evidence of slope instability		
	Arial 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	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks: _____		
2.	Bench Breached	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks: _____		
3.	Bench Overtopped	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks: _____		
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 (Low spots)	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of settlement
	Arial extent: _____		Depth: _____
	Remarks: _____		
2.	Material Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of degradation
	Material type: _____		Arial extent: _____
	Remarks: _____		
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of erosion
	Arial extent: _____		Depth: _____
	Remarks: _____		
4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Arial extent: _____		Depth: _____
	Remarks: _____		
5.	Obstructions	Type: _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Arial extent: _____	
	Size: _____		
	Remarks: _____		
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	Arial extent: _____	
	Remarks: _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<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 type="checkbox"/> N/A
	Remarks: _____		
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 type="checkbox"/> N/A
	Remarks: _____		
3.	Monitoring Wells (within surface area of landfill)		
	<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 type="checkbox"/> N/A
	Remarks: _____		
4.	Extraction Wells Leachate		
	<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 Remarks: _____	<input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A
5. Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A Remarks: _____	
E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1. Gas Treatment Facilities <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Flaring <input type="checkbox"/> Good condition </div> <div> <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Needs maintenance </div> <div> <input type="checkbox"/> Collection for reuse </div> </div> Remarks: _____	
2. Gas Collection Wells, Manifolds and Piping <input 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 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: _____	
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1. Siltation Area extent: _____ Depth: _____ <input type="checkbox"/> N/A <input type="checkbox"/> Siltation not evident Remarks: _____	
2. Erosion Area 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
Area 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			
Area extent: _____		Type: _____	
Remarks: _____			
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Erosion not evident
Area extent: _____		Depth: _____	
Remarks: _____			
4.	Discharge Structure	<input checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks: _____			
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
Area extent: _____		Depth: _____	
Remarks: _____			
2.	Performance Monitoring	Type of monitoring: _____	
<input 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 type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Pumps, Wellhead Plumbing and Electrical		
<input type="checkbox"/> Good condition <input 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 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: _____			
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 type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Treatment Train (check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters: _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent): _____ <input type="checkbox"/> Others: _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually: _____ <input type="checkbox"/> Quantity of surface water treated annually: _____ Remarks: _____
2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs maintenance Remarks: _____
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks: _____
6.	Monitoring Wells (pump and treatment remedy)

<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> All required wells located	<input type="checkbox"/> Functioning <input type="checkbox"/> Needs maintenance	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> N/A	<input type="checkbox"/> Good condition
Remarks: _____			
D. Monitoring Data			
1. Monitoring Data			
<input type="checkbox"/> Is routinely submitted on time		<input type="checkbox"/> Is of acceptable quality	
2. Monitoring Data Suggests:			
<input type="checkbox"/> Groundwater plume is effectively contained		<input type="checkbox"/> Contaminant concentrations are declining	
E. Monitored Natural Attenuation			
1. Monitoring Wells (natural attenuation remedy)			
<input checked="" type="checkbox"/> Properly secured/locked <input type="checkbox"/> All required wells located		<input checked="" type="checkbox"/> Functioning <input type="checkbox"/> Needs maintenance	
		<input checked="" type="checkbox"/> Routinely sampled <input type="checkbox"/> N/A	
Remarks: <u>Monitoring wells were generally observed to be in good condition. However, one well cap was broken and one well could not be located during the inspection. No sampling was conducted in 2015 or 2016.</u>			
X. OTHER REMEDIES			
If there are remedies applied at the site and 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			
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 designed to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emissions). <u>The remedy was designed to limit public exposure to contaminated groundwater and soil through monitored natural attenuation of groundwater, the stabilization and capping of soil, and implementation of institutional controls. During the site inspection and based on recent sampling events, the remedy appears to be in place and functional.</u>			
B. Adequacy of O&M			
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. <u>The cover areas are well maintained. EPA abandoned unneeded wells but annual sampling did not occur in 2015 or 2016.</u>			
C. Early Indicators of Potential Remedy Problems			
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. <u>None.</u>			
D. Opportunities for Optimization			
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>EPA may consider discontinuing wells as concentrations continue to decrease.</u>			

APPENDIX E - PRESS NOTICE

STILLWATER COUNTY NEWS

Thursday, June 22, 2017—3

Proposed Land Use Map talk gets heated

By Mikaela Kunkel

Discussion was lively at the official public hearing to discuss the adoption of the proposed Future Land Use Map (FLUM) at the weekly regularly scheduled Stillwater County Commissioners' agenda meeting.

The FLUM is a long regulatory document that would act as an umbrella to the existing growth policy adopted in 2007. During the 30-day comment period regarding the map, one written comment was received by the commissioners. From the Schell family, the letter opposed the FLUM and expressed concern for the future of the agricultural activity that is currently in use on their property. On the map, that area is labeled as low-density housing.

Two letters in support of the FLUM were also read, both of which were received in February. The first, written by the county's Economic Development Coordinator Marlene Hagen, discussed how the map addresses the need to prepare for growth and development in the Columbia area. The second, from Eco-

nomics Development Director for the Stillwater Resource Consortium and Development Economic Development, Thelma Taylor, said that the FLUM would benefit and facilitate growth in the community.

At the hearing, Heidi Skelton, a member of the Joint City-County Planning Board, spoke as a proponent, stating that the map would be a tool to help the county and the city to plan for future growth. County Board and Bridge Superintendent Mark Segerstrom said that the FLUM would help the county and the city to plan for future growth.

Richard Schell spoke at the hearing as an opponent, saying that he is opposed to the low-density housing development in the area his 70-acre lot is located, but he is not opposed to all development. He also raised concerns about future aquifer use.

Andrea Miller, the lawyer of Schell and Carl Gales, argued that the FLUM does not contain the proper elements for a growth policy as is outlined in Montana law.

Miller also argued that the map would be in contrary to a law that prohibits resolutions from ending existing agricultural activities on land outside the boundaries of an incorporated town.

Any official action on the FLUM was postponed by the commissioners in order to discuss the arguments brought up at the hearing with County Attorney Nancy Kohler, who was present for about half of the discussion.

The following hearings were also conducted at Tuesday's meeting:

PC CHIP NEAL EID AWARD
Following the recommendations of the Board and Bridge Superintendent, the Park City Chip Seal project bid was awarded to Kwik-Kwik, out of Billings, for the amount of \$105,165.

LIBRARY BOARD APPOINTMENT
Tary Hamilton was unanimously appointed to the library board for a five-year term.

CLAIMS
Claims for the amount of \$171,075.52 were approved.

SCN wins 5 statewide awards

The Stillwater County News won five awards in the annual Hector Newspaper Contest for articles and advertising presented in 2016.

The awards were announced last Saturday night at the Montana Newspaper Association's annual convention in Lewistown and are as follows:

SECOND PLACE
Best Sponsor Page, Mickey Treese

THIRD PLACE
Best News Article, "Huge New Waterways"

FIRST PLACE
Best Interpretive/Investigative Journalism, Maile Prosser

FIRST PLACE
Best Continuing News Coverage, Maile Prosser

a new location of county offices.

SECOND PLACE
Best News Story, Maile Prosser

THIRD PLACE
Best News Article, "Huge New Waterways"

FIRST PLACE
Best Interpretive/Investigative Journalism, Maile Prosser

FIRST PLACE
Best Continuing News Coverage, Maile Prosser

FIRST PLACE
Best Continuing News Coverage, Maile Prosser

City Business

By Mikaela Kunkel

The following business was discussed at the weekly regularly scheduled Columbia City Council meeting:

STORM DRAIN PROJECT FUNDING

The council approved moving forward with the promise of financing approximately \$300,000 from the Water Fund to the Storm Drain Capital Fund in order to finance this summer's storm drain project. Currently, there is enough money in the Water Fund to accommodate the loan and still have some left over in case of an emergency.

City Clerk Kevin Miller explained that it will be structured as a normal loan, but without an origination fee and with a lower interest rate. The Storm Drain Fund will pay back the loan to the Water Replacement Fund.

POLICE EMPLOYMENT

Police Chief Jacob Ward reported that the Columbia Police is seeking a third anniversary celebration. The celebration will be held on July 16, 2017.

On July 16, 2017, the 100th anniversary of the congregation's current church building, but it is the 125th anniversary of its former location as a Lutheran church.

This all takes place during the 50th anniversary of a historical milestone: the founding of the city of Stillwater. On Sunday, July 16, a special day has been set aside to honor the city's heritage and to look forward to the congregation's future.

The Bearfoot Heights amenity expansion and repaving project is ongoing as parts and materials are in. The current water demand is rising due to high water levels in the river and a significant rainfall event.

The planning, design and construction of the water treatment plant is ongoing. The project will be completed in the next couple of weeks.

DEQ, continued from page 1

In a letter dated Oct. 26, 2016, addressed to Commissioner Maureen Dwyer, DEQ stated its enforcement division had received a complaint about environmental issues taking place at the old hospital in which an asbestos inspection may not have been performed by an accredited inspector, which is a violation of the Asbestos Control Act and the Administrative Rules of Montana (ARM).

The DEQ letter also asked about a number of asbestos-containing materials being removed from the building and disposed without the proper permits, and finally, the letter requested about markers not meeting general provisions equipment while working in the building.

That letter also indicated that a DEQ accredited person the inspector must conduct an inspection prior to any further demolition or renovation and that report must be made available to DEQ.

DEQ also instructed the owner that an asbestos project permit must be obtained if any renovation, demolition or less substantial work is to be done, only demolition and renovation work has been taken to date. DEQ also stated that the owner had not taken any action to date.

On September 20, 2016, a letter was sent to provide you with the state regulatory to ensure compliance with the ARM. The letter stated that DEQ received a response from the commission, which stated that to date, no renovations have been done, only demolition and renovation work has been taken to date.

DEQ also stated that the owner had not taken any action to date. DEQ also stated that the owner had not taken any action to date.

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Dedication of Immanuel's current church building, July 16, 1917

Immanuel Lutheran celebrating triple anniversary

Immanuel Lutheran Church in Absaroka is celebrating a triple anniversary this year.

On July 16, 2017, the 100th anniversary of the congregation's current church building, but it is the 125th anniversary of its former location as a Lutheran church.

This all takes place during the 50th anniversary of a historical milestone: the founding of the city of Stillwater. On Sunday, July 16, a special day has been set aside to honor the city's heritage and to look forward to the congregation's future.

The Bearfoot Heights amenity expansion and repaving project is ongoing as parts and materials are in. The current water demand is rising due to high water levels in the river and a significant rainfall event.

The planning, design and construction of the water treatment plant is ongoing. The project will be completed in the next couple of weeks.

port celebration will be held with coffee, lunch and entertainment by the Singing S. Tickets for this event are \$10 for adults and \$10 for children 12 and under, and may be purchased by July 9 from Georgetown Shelter (206-7123).

A written history will be printed and presented, detailing how Norwegian immigrants settled in the Rosebud and Stillwater valleys with the Crow Reservation was founded in 1864 and spread for settlement, according to historical records of the settlers who arrived, out of work with the close of the silver mines near White Sulphur Springs.

These men brought with them Pastor Jorgens Madsen, who they had met in their hometown, to the center of the church to perform a wedding and several baptisms in 1865. Agreeing to start a Lutheran congregation, these early settlers built their first church north of Absaroka on land provided by Magnus Johnson from the region of Crow and Tongue.

Today, the site of the church is the site of the church. The church was founded in 1865 and has been a part of the community ever since.

Beat the summer's heat with leafy SHADE TREES!

We have a huge selection of healthy, fast-growing trees. Every tree is guaranteed to grow in our area. Planting services available.

North of Big Timber on Otter Cr. Rd.
406-322-4193
Mon-Fri 9-5:30 Sun 10-5
www.shade-trees.com

Thank You

Betty and Owen McGraw would like to thank the Columbia firefighters that worked so hard to put out the fire at the old Stillwater Body Shop last week. We are forever grateful for all you hard work.

Don't let spring thaw leave you stuck in traffic. Make sure your insurance policy can cover you with any and all of your travel needs.

Did you know that standard insurance policies don't cover you if you have an accident on a road trip? Find out more in our new book, "How to Stay Safe on the Road." Available in paperback.

Protect your car and your wallet. Get the book today!

MANDEVILLE INSURANCE AGENCY

P.O. Box 69
130 S. Pratten Street
Columbia, MT 59019
Phone: 406-322-5361
Fax: 406-322-5461

EPA
United States
Environmental Protection
Agency

Mouat Industries Superfund Site Five-Year Review

EPA is conducting a Five-Year Review of the remedy for the Mouat Industries Superfund site in Columbia, Montana.

The purpose of the Five-Year Review is to make sure the selected cleanup actions effectively protect human health and the environment.

Cleanup actions at the site address contamination that resulted from the operation of Mouat Industries from 1957 to 1992 that generated wastes that seeped into the soil and groundwater.

This will be the third Five-Year Review and will occur June 2017 through April 2018 when a final report is expected to be completed. In that time, EPA will review documents, review and are you okay, and interview people who can provide information about the remedy to determine how well it is protecting human health and the environment.

EPA invites community participation in the Five-Year Review. For more information about the Mouat Industries Superfund Site, the Five-Year Review Process, or to provide information or participate in a community interview, please contact:

- Roger Hoopes, EPA Remedial Project Manager
Telephone: 406-322-5361 (406) 457-5031
- Robert Mott, EPA Community Involvement Coordinator
Email: robert.mott@epa.gov (406) 457-5032
- Meeting Address: EPA Region 8, 1015 1st Street, Suite 3200, Helena, MT 59601

Information about the site is also available at:

- The Stillwater County Library
27 North 4th Street, Columbia, MT 59019
- EPA's Superfund Remedial Center
15 West 15th Street, Suite 3200, Helena, MT 59601
- www.epa.gov/superfund/mouatindustries

Billings
Montana
Community Memorials
Markers
Inscriptions
Bronze Plaques
Free and Anonymous
800-345-1391 • 406-490-2719
3452 Montana Ave. • Billings, MT

APPENDIX F – SITE INSPECTION PHOTOS



Monitoring well MO-25, in front of the public works building



The public works building and the gravel parking lot



Secured monitoring well in the block placement area



Vegetated cover area (foreground) and airport (background)



Northeast parcel of the former Timberweld property



Western parcel of the former Timberweld property



The vegetated cover area and public works building



Regraded cover area and the public works parking lot



Eastern parking lot of the public works building



Active sampling of downgradient monitoring well



The public works building



Downgradient well and bollards



Eastern parcels of the former Timberweld property

APPENDIX G – INTERVIEW FORMS

Mouat Industries Superfund Site		Five-Year Review Interview Form	
Site Name:	<u>Mouat Industries</u>	EPA ID No.:	<u>MTD021997689</u>
Interviewer Name:	<u>Ryan Burdge</u>	Affiliation:	<u>Skeo</u>
Subject Name:	<u>Daryl Reed</u>	Affiliation:	<u>MDEQ</u>
Subject Contact Information:			
Time:		Date:	<u>10/19/2017</u>
Interview Location:	<u>Self-reported</u>		
Interview Format (circle one):	<u>In Person</u>	<u>Phone</u>	<u>Mail</u>
			<u>Other: Email</u>
Interview Category:	<u>State Agency</u>		

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?
My overall impression is mostly positive. Since the removal action decision made by EPA during the early time-critical removal actions to build an unlined repository, the project has been mostly successful in reducing the chromium groundwater plume, establishing an effective groundwater monitoring program, and allowing the site to be redeveloped.
2. What is your assessment of the current performance of the remedy in place at the Site?
Thanks to the involvement of the Montana Bureau of Mines and Geology, there is a better understanding of the hydrogeologic mechanisms that are responsible for the annual increases in the chromium groundwater plume during spring recharge conditions. Releases of chromium to groundwater continue during high-water events from contact with either the uncemented material between the solidified blocks or the treated blocks themselves.
3. Are you aware of any complaints or inquiries regarding site-related environmental issues or remedial activities from residents in the past five years?
I am not aware of any concerns other than my own. Although the Post Removal Site Control Plan addressed decreasing the frequency of groundwater monitoring, it was not supposed to happen until after performing trend analysis in this third Five-Year Review. Groundwater monitoring was not taking place during 2016. Also, the ability to accurately time the sample event to capture the peak chromium plume migration has been hindered by no longer having pressure transducers to obtain real-time water level changes.
4. Has your office conducted any site-related activities or communications in the past five years? If so, please describe the purpose and results of these activities.
No.
5. Are you aware of any changes to state laws that might affect the protectiveness of the Site's remedy?
No.
6. Are you comfortable with the status of the institutional controls at the Site? If not, what are the associated outstanding issues?
Yes, the institutional controls are likely to be more effective with the town maintenance facility at the repository because the staff is on site to control access and conduct maintenance if needed.
7. Are you aware of any changes in projected land use(s) at the Site?
No.

8. Do you have any comments, suggestions or anything to add regarding the management or operation of the Site's remedy?

The Post Removal Site Control Plan should either be followed or revised. The Plan calls for trend analysis in this third Five-Year Review that "demonstrates that chromium concentrations are stable, decreasing, or non-detect, then sampling will be reduced to biennially."

9. Can we add your email address to our distribution list for the Site?

Yes.

Mouat Industries Superfund Site**Five-Year Review Interview Form**Site Name: Mouat IndustriesEPA ID No.: MTD021997689Interviewer Name: Ryan BurdgeAffiliation: SkeoSubject Name: Ted DuaimeAffiliation: Montana Bureau of Mines
and GeologyTime: 11:00 a.m.Date: 7/25/17Interview Location: Self-reportedInterview Format (circle one): In Person

Phone

Mail

☐ Other: EmailInterview Category: State Agency

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?
Positive. The agencies (EPA and MDEQ) have worked with the Town to help with development of the repository site (new town shops). The cap area is well maintained by the Town with good vegetative coverage.
2. What is your assessment of the current performance of the remedy in place at the Site?
Remedy appears to be working well; however, there are still groundwater issues on site and possibly off site during certain periods.
3. Are you aware of any complaints or inquiries regarding site-related environmental issues or remedial activities from residents in the past five years?
No complaints. Have had inquiries regarding improvements to airport runway.
4. Has your office conducted any site-related activities or communications in the past five years? If so, please describe the purpose and results of these activities.
Performed annual sampling of the Site through 2015. This included collection of water samples and monitoring water levels. Results of monitoring were reported to EPA and MDEQ.
5. Are you aware of any changes to state laws that might affect the protectiveness of the Site's remedy?
NA.
6. Are you comfortable with the status of the institutional controls at the Site? If not, what are the associated outstanding issues?
NA.
7. Are you aware of any changes in projected land use(s) at the Site?
No.
8. Do you have any comments, suggestions or anything to add regarding the management or operation of the Site's remedy?
No.
9. Can we add your email address to our distribution list for the Site?
Yes.

Mouat Industries Superfund Site**Five-Year Review Interview Form**Site Name: Mouat IndustriesEPA ID No.: MTD021997689Interviewer Name: Ryan BurdgeAffiliation: SkeoSubject Name: Dennis HoltenAffiliation: Town of Columbus

Subject Contact Information:

Time: 8:30 a.m.Date: 07/13/17Interview Location: Self-reportedInterview Format (circle one): In Person

Phone

Mail

Other: Email

Interview Category: City of Columbus

1. Are you aware of the former environmental issues at the Site and the cleanup activities that have taken place to date?
Yes.
2. What is your overall impression of the remedial activities at the Site?
Disappointing that all the time, effort and millions of dollars were spent on the remedial activities when ultimately all of the contaminated soil could have been hauled to a hazardous waste site as much of it was at the end.
3. How/where do you get information about the Site?
State/EPA.
4. What have been the effects of the Site on the surrounding community, if any?
Loss of useful industrial site property.
5. Are you aware of any complaints or inquiries regarding environmental issues or the remedial action from residents since implementation of the cleanup?
Not aware of any recent complaints or inquiries.
6. Have there been any problems with unusual or unexpected activities at the Site, such as emergency response, vandalism or trespassing?
No.
7. Are you aware of any changes to state laws or local regulations that might affect the protectiveness of the Site's remedy?
No.
8. Are you aware of any changes in projected land use(s) at the Site?
No.
9. Has EPA kept involved parties and surrounding neighbors informed of activities at the Site?
Yes.
10. What is the best way to reach you with information about the Site?
Email.
11. What is the best way to reach the community with information about the Site?
Local newspaper, Town of Columbus website, Stillwater County website and library.
12. Do you have any comments, suggestions or anything to add regarding the project?

How long will we be going through five-year reviews and will this project ever be closed?

13. Can we add your email address to our distribution list for the Site? If yes, please provide.
Yes.

Mouat Industries Superfund Site**Five-Year Review Interview Form**Site Name: Mouat IndustriesEPA ID No.: MTD021997689Interviewer Name: Ryan BurdgeAffiliation: SkeoSubject Name: Shawn TollinAffiliation: FMC Corporation

Subject Contact Information:

Time: 9:30 a.m.Date: 09/14/17Interview Location: Self-reportedInterview Format (circle one): In Person Phone Mail

Other: Email

Interview Category: Potentially Responsible Parties (PRPs)

1. What is your overall impression of the remedial activities at the Site?
Remedial activities are considered complete.
2. What have been the effects of the Site on the surrounding community, if any?
No environmental effects, to the best of FMC's knowledge. The community has been reusing the site since completion of remediation.
3. What is your assessment of the current performance of the remedy in place at the Site?
Remedy is performing as designed.
4. Are you aware of any complaints or inquiries regarding environmental issues or the remedial action from residents since implementation of the cleanup?
None, to the best of FMC's knowledge.
5. Do you feel well-informed regarding the Site's activities and remedial progress? If not, how might EPA convey site-related information in the future?
Yes.
6. Do you have any comments, suggestions or anything to add regarding the management or operation of the Site's remedy?
No.
7. Can we add your email address to our distribution list for the Site?
Yes.

APPENDIX H – TOWN OF COLUMBUS ORDINANCE 336

Second Reading

ORDINANCE NO. 336

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF COLUMBUS, MONTANA, AMENDING SUBSECTIONS F, G AND H OF SECTION 17.76.030 OF THE COLUMBUS MUNICIPAL CODE

WHEREAS, the Montana Department of Environmental Quality and the US Environmental Protection Agency have recommended changes to Subsections F, G and H of Section 17.76.030, of the Columbus Municipal Code pertaining to performance standards for the block placement area within the Mouat Industries Superfund Site overlay district based on the November, 2009, Mouat Industries Superfund Site Structural Capacity and Institutional Controls Reassessment Final Report prepared by the Bureau of Mines and Geology Montana Tech of the University of Montana; and

WHEREAS, the Town Council is agreeable to making the recommended changes.

NOW, THEREFORE, be it ordained by the Town Council of the Town of Columbus, Montana:

1) Subsection F of Section 17.76.030 of the Columbus Municipal Code is hereby amended to read as follows:

"F. If a building is constructed within the block placement area, excavation required for this construction and trenching for utilities is allowed. Excavated waste may be placed back into the foundation excavation and compacted as backfill to support the foundation and /or disposed of according to state of Montana approved methods. Any building or structure, including the related utilities, must meet all applicable requirements of the Montana State Building Code and the Town of Columbus zoning code. Load limits for buildings or structures will not exceed six thousand (6,000) pounds per square foot as long as waste is left in place"

2) Subsection G of Section 17.76.030 of the Columbus Municipal Code is hereby amended to read as follows:

"G. Asphalt paving can be substituted for the uppermost four inches of gravel cover. In this case, the asphalt will be placed in three courses---a minimum two-inch gravel base course, a four-inch asphalt base course, and a two-inch surface wearing course.

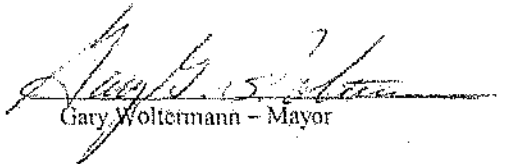
3) Subsection H of Section 17.76.030 of the Columbus Municipal Code is hereby amended to read as follows:

"H. Maintenance of fences around the soil cover areas as well as locked gates are no longer deemed necessary. However, the property owner must maintain the vegetated soil cover or gravel cover on the site.

4) That all Ordinances or parts of Ordinances in conflict herewith shall be repealed upon the effective date of this Ordinance.

5) This Ordinance shall become effective thirty (30) days after its passage and approval.

PASSED by the Town Council and approved by the Mayor on second reading this 15th day March, 2010.


Gary Woltermann - Mayor

ATTEST:


Ronald D. Barndt - Town Clerk



ORDINANCE NO. 328

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF COLUMBUS,
MONTANA, AMENDING SUBSECTION D OF SECTION 17.76.010 AND
SECTION 17.76.040 OF THE COLUMBUS MUNICIPAL CODE

WHEREAS, the U.S. Environmental Protection Agency has allowed the removal of groundwater use restrictions from the Superfund overlay district (SOD), excepting the block placement area; and

WHEREAS, the U.S. Environmental Agency Protection Agency has requested that the Town amend Subsection D of Section 17.76.010 and Section 17.76.040 of the Columbus Municipal Code to reflect the removal of the groundwater use restrictions from the SOD, excepting the block placement area.

NOW, THEREFORE, be it ordained by the Town Council of the Town of Columbus, Montana:

1) Subsection D of Section 17.76.010 of the Columbus Municipal Code is hereby amended to read as follows:

"D. Limiting well use and prohibiting drilling of wells within the SOD block placement area; and ..."

2) The first sentence under Section 17.76.040 of the Columbus Municipal Code is hereby amended to read as follows:

"17.76.040 Limitations on groundwater use.

The following limitations apply to groundwater use and related activities within the Superfund overlay district block placement area:..."

3) This Ordinance shall become effective thirty (30) days after its passage and approval.

PASSED by the Town Council and approved by the Mayor this 3rd day March, 2008,


Gary Woltermann - Mayor

ATTEST:


Ronald D. Barndt - Town Clerk

17.76.010

ENVIRONMENTAL
PROTECTION AGENCY

Chapter 17.76

MAY 19 2005

SOD SUPERFUND OVERLAY DISTRICT

Sections:

- 17.76.010 Intent.
- 17.76.020 Additional application requirements.
- 17.76.030 Performance standards for block placement area.
- 17.76.040 Limitations on groundwater use.
- 17.76.050 Sunset provision.

17.76.010 Intent.

The intent of the Superfund overlay district (SOD) is to protect public health, safety and welfare while allowing appropriate use of lands within the district. This intent will be accomplished by:

- A. Assuring that land use in the Superfund overlay district is compatible with protecting, and providing for permanent preservation and maintenance of remedial actions implemented pursuant to the Superfund law, including soil caps, treated concrete blocks, and other remedial structures;
- B. Requiring that any development in the block placement area of the SOD be preceded by submittal of detailed site and construction plans, prepared by an architect or engineer, for review and approval by the town as an institutional control in the context of the federal Superfund law;
- C. Requiring submittal of as built plans with certification from an architect or engineer that site development and construction in the block placement area was completed in compliance with this zoning title and federal Superfund law;
- D. Limiting well use and prohibiting drilling of wells within the SOD; and
- E. Placing a notice to purchasers on any deed, contract for sale, or other instrument of conveyance before any lot or parcel, or any interest in any lot or parcel, in the Superfund overlay district is conveyed. (Ord. 321 (part), 2004; Ord. 298 § 1 (part) (11.02.191), 1997)

17.76.020 Additional application requirements.

All applications for uses and development in the Superfund overlay area shall include the following information:

- A. As with other permit applications, an application form, an accurate site plan and review fees;

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B. A detailed grading and drainage plan prepared by an engineer showing the location, dimensions and depth of all excavations, volumes of material to be moved, and other drainage features;

C. Detailed plans prepared by an architect or engineer showing how remedial structures such as soil caps, treated concrete blocks, and other structures will be protected and maintained in relation to the proposed development in the block placement area;

D. Test results that confirm that any fill material proposed to be imported to the block placement area has less than 0.1 mg/l total chromium in toxicity characteristic leaching procedure (TCLP) extracts or written certification that no fill material will be imported; and

E. Bearing capacities, design loads and wheel loads resulting from uses proposed for the block placement area. (Ord. 321 (part), 2004: Ord. 298 § 1 (part) (11.02.192), 1997)

17.76.030 Performance standards for block placement area.

The following standards apply to the block placement area within the Superfund overlay district:

A. No excavation will be permitted through the twenty-four (24) inch thick soil or gravel cover except for building or utility construction as described in subsection F of this section. (Excavation is permitted at the existing sanitary sewer only for purposes of sewer maintenance and improvement.)

B. Areas with gravel cover and block placement can be used for vehicle parking, material storage and related traffic. This includes trucks up to the maximum gross vehicle weight and axle loads permitted under the Montana Department of Highways adopted "Federal Bridge Formula," forklifts up to fifty thousand (50,000) pounds gross weight with up to thirty-seven thousand (37,000) pounds on a single axle with four tires, and construction equipment with up to seven thousand two hundred (7,200) pounds per square foot under the actual tire or track contact area.

C. Areas with a vegetated soil cover cannot be used for any purpose unless a gravel cover or a gravel and asphalt overlay is placed over the twenty-four (24) inch thick soil cover or a gravel cover that meets the following criteria:

1. The gravel will be select road stone from a local source. Gravel already on the site will be used to the extent possible; off-site gravel sources will be used only if on-site quantities of suitable gravel are not sufficient. This gravel will be well sorted with a range of particle sizes to facilitate close compaction and to minimize voids and permeability in the cover after placement and compaction.

17.76.030

2. The gravel will be separated from the underlying blocks and soils by a woven geotextile designed to reduce migration of gravel particles downward into the block-south layer and of block pieces upward into the gravel layer.

3. The gravel layer will be approximately two feet (twenty-four (24) inches) thick.

4. The gravel will be placed in six to twelve (12) inch lifts to facilitate grading and compaction. Each lift will be compacted with a motorized road construction type roller.

5. The finished surface of gravel will be graded to promote precipitation runoff to perimeter diversion ditches. The center elevation of the gravel surface will be approximately one foot above the perimeter elevations, and the average surface slope will be one percent.

6. The gravel surface will be designed and installed to accommodate vehicular traffic and open storage of materials. Operation of vehicles such as trucks and forklifts will promote compaction of the surface gravel and further reduce infiltration.

7. Maintenance of the gravel cover will be by the landowner or lessee.

D. The soil and gravel covers constructed pursuant to subsection C of this section must be maintained by the property owner to prevent degradation. Damage due to erosion, wind, burrowing animals, vehicles, or other causes must be repaired promptly by the property owner.

E. The perimeter drainage channels and culverts must be maintained by the city of Columbus public works department in an open, free-flowing condition.

F. If any building or structure (including related utilities) is to be constructed on the block placement areas, sufficient soil must be placed over initial cover so that any excavation required for this construction does not penetrate the placed blocks. Any building or structure, including the related utilities, must meet all applicable requirements of the Montana State Building Code and the city of Columbus zoning code. Load limits for buildings or structures will not exceed six thousand (6,000) pounds per square foot.

G. Asphalt paving can be substituted for the uppermost six inches of the gravel cover. In this case, the asphalt will be placed in two courses—a four inch base course and a two inch surface wearing course.

H. The fences around the soil cover areas must be maintained by the property owner and the gates must be kept locked. To protect the soil cover, wheeled vehicles must be excluded from soil cover areas except for soil cover and vegetation maintenance. (Ord. 298 § 1 (part) (11.02.193), 1997)

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17.76.040 Limitations on groundwater use.

The following limitations apply to groundwater use and related activities within the Superfund overlay district:

A. Installation or operation of new groundwater wells, groundwater fed ponds or channels, and other groundwater extraction or recovery systems will not be permitted.

B. Use of groundwater from existing wells, ponds, springs, seeps or any other groundwater recovery or extraction system will not be permitted, except for lawn irrigation use, use of the existing golf course pond, and groundwater monitoring of wells.

C. Excavation below the groundwater table (static groundwater level) for any purpose will not be allowed except for temporary excavation work necessary for construction purposes including placement of footings and utilities. Such temporary excavation work shall require a permit from the town of Columbus. (Ord. 298 § 1 (part) (11.02.194), 1997)

17.76.050 Sunset provision.

Application requirements and limitations for groundwater use shall sunset and will no longer be applicable after the U.S. Environmental Protection Agency allows the removal of these restrictions from the Superfund overlay district. (Ord. 321 (part), 2004)