Montana Department of Natural Resources and Conservation
Water Resources Division
Water Rights Bureau

ENVIRONMENTAL ASSESSMENT
For Routine Actions with Limited Environmental Impact

Part I. Proposed Action Description

1. Applicant/Contact name and address:

   Slawson Exploration Co., Inc.
   1675 Broadway, Suite 1600
   Denver, CO 80202

2. Type of action: Application for Beneficial Use, Application 40P 30063974

3. Water source name: Unnamed tributary to East Redwater Creek

4. Location affected by project:

   T24N 52E
   Section: 10 - Richland County
   15 – Richland County
   16 – Richland County
   20 – Richland County
   21 – Richland County
   22 – Richland County
   23 – Richland County
   26 – Richland County
   27 – Richland County
   28 – Richland County
   29 – Richland County
   32 – Richland County
   33 – Richland County
   34 – Richland County
   35 – Richland County

   T23N R52E
   Section: 3 - Richland County
   4 – Richland County
   5 – Richland County

5. Narrative summary of the proposed project, purpose, action to be taken, and benefits: The DNRC shall issue a water use permit if an applicant proves the criteria in 85-2-311 MCA are met.

   This project is to pump water from an existing reservoir in Section 21 of T24N R52E for the purpose of industrial use in well completion and hydraulic formation fracturing processes. The existing reservoir acts as a primary point of diversion, with a secondary diversion occurring in the SW¼NE¼SE¼ of Section 21 T24N R52E. The proposed secondary means of diversion occurs in the form of vacuum loading trucks that load at a flow rate of approximately 0.41 cfs. The appropriation would achieve a maximum volume of 64.4 AF annually, and would occur from January 1st through December 31st. Water in used in

6. Agencies consulted during preparation of the Environmental Assessment:
   (include agencies with overlapping jurisdiction)

   Montana Natural Heritage Program
   Montana Department of Environmental Quality Website (TMDL 303(d) Listing)
   Montana Fish, Wildlife & Parks
   United States Fish & Wildlife Service National Wetlands Inventory

Part II. Environmental Review

1. Environmental Impact Checklist:

PHYSICAL ENVIRONMENT

WATER QUANTITY, QUALITY AND DISTRIBUTION

Water quantity *- Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.*

Determination: The Montana Department of Fish, Wildlife & Parks does not identify this unnamed tributary to the East Redwater Creek, nor the East Redwater Creek as chronically or periodically dewatered.

Water quality *- Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.*

Determination: A 2010 EPA Waterbody Report for East Redwater Creek exists for the waterbody to which the reservoir utilized in this project contributes. Nonpoint source pollutants concerning Nitrite/Nitrate, total Nitrogen, total Phosphorous, and Total Dissolved Solids contributed to partial impairments on this source.

The 2012 Water Quality Information summary for the East Redwater Creek shows the source to partially support Aquatic Life and Primary Contact/Recreation uses. These impairments likely stem from the above mentioned nutrient centered impairments on the source.

As the project seeks a 100% consumptive use, no return flows are anticipated. Little impact to water quality is expected on this source as a direct result of this project.

Groundwater **-** *Assess if the proposed project impacts ground water quality or supply. If this is a groundwater appropriation, assess if it could impact adjacent surface water flows.*

Determination: This application pertains to a surface water appropriation from an unnamed tributary to East Redwater Creek, there are no significant impacts to groundwater supply or quality anticipated to occur.

DIVERSION WORKS - *Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

Determination: The primary diversion works for this proposed appropriation has been in place for approximately sixty years. The secondary means of diversion for this proposed appropriation consists of tank mounted vacuums operated by individual trucks at a point on the road atop the dam. This type of diversion should pose no impacts to channel or flow characteristics, nor present obstructions to the flow. The dam affected should not differ in operation by any means, and the appropriation will have no effect on well construction.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species **-** *Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

Determination:

No endangered species were identified in a Montana Natural Heritage Program search of the implicated townships.

One animal species was identified as a species of concern within T24N R52E, the Iowa Darter. The Iowa darter is a native to eastern Montana streams, occupying small gently flowing prairie streams and reservoirs built upon these sources. After spawning season, the fish return to deeper pools characterized by the reservoir utilized in this application. The proposed project does not impose significant danger to this species, and no more detailed survey is available to show if the Iowa Darter inhabits this specific stream and reservoir system.

Additionally, one animal species of potential concern was identified in the MTNHP search within T23N R53E. The Brook Stickleback, another small fish, shares similar habitat & behavioral characteristics with the Iowa Darter. Both of these species utilize dense vegetative cover for spawning and habitat requirements, habitat which is less likely to be found at the face of a dam on a relatively deep reservoir where the new appropriation would take place.

No plant species of concern, nor potential species of concern were identified within the affected townships.

Wetlands *- Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.*

Determination: The application site is located near the confluence of two non-perennial streams in western Richland County. While the historical reach would have been ephemeral in nature, water is maintained year round behind a dam that was installed in the 1950's. Typically reservoirs have a significant water depth difference between the tail (upstream side) and the deepest portion which commonly occurs in the historical stream thalweg just upstream of the dam itself. This gradient presents a situation where littoral zone areas are predominantly focused on the tail end, or upstream side of the reservoir. The reservoir involved with this application is very typical in this sense, and a significant area is identified as freshwater emergent wetland in the USFWS National Wetlands Inventory.

In semi-arid climates and Great Plains ecosystems, wetlands generally occur in narrow riparian bands. Wetland values relate to their functionality, a relationship that is difficult to transcribe into social values as it is difficult, if not impossible, to assign economic values to these functions. This is not to say that wetlands have no value, nor does this imply that wetlands are not functional.

The hierarchy described by Smith, et al (1995) is not anthropocentric, instead it addresses wetland functionality in terms of integrity, cycling, and sequestration. In this regard, the wetlands found on the site are significant. The landscape throughout the contributing watershed is highly influenced by human activity, including farming, ranching, and transportation uses. Many of the human impacts alter flow regimes, sedimentation, embankments, and introduce additional or contaminated runoff.

Remaining patches of emergent wetlands play critical roles in buffering runoff, dissipating flow energy along stream edges, provide valuable habitat, and stabilize banks.

The proposed pumping area utilizes the road built across the top of the dam, near the deepest point in the reservoir, a depth beyond the limits of a littoral zone capable of being supported in this environment. The reservoir is also used by cattle drinking directly from the source, causing erosion of the banks and probable damage to emergent wetlands with varying pool depths. As there is already seasonal depletion in the form of relatively high pan evaporation and evapotranspriation, it is likely that this utilization will force cattle further into the reservoir interior throughout the season as the depth diminishes from full pool as it exacerbates demand from this source..

Ponds *- For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.*

Determination: The affected area does not include any natural ponds or lakes, however it does contain a reservoir. This feature is differentiated from a pond by the linear depth gradient and a non-unified limnological stratigraphy. This application does not pertain to any ponds, however impacts to the aforementioned wetlands will have effects on fish & wildlife utilization of the site.

GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE - *Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.*

Determination: This project is adjacent to East Redwater Creek. Typical soil profiles in this area are predominantly silty loams, often with sandy loam in higher elevations of the watershed. This area is underlaid with Lebo shale and Fort Union formations extending up to 900 feet below ground surface. Soils and the underlying formations in this area are known to be calcareous, and naturally occurring saline seeps are not uncommon for this region. The project utilizes an existing reservoir that has been in use for approximately sixty years. The proposed project should have little to no effect upon soil stability or saline seeps.

VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS - *Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.*

Determination: Vegetative cover is predominantly grasses and forbs for this site. The proposed appropriation should not have an impact on vegetative cover. If Saltcedar is present on site, the potential for increased cover of noxious weed exists. Saltcedar is a Phreatophytic invasive species that thrives in the type of condition found at this site. Left uncontrolled, Saltcedar can deplete reservoirs through copious transpiration, aggressive fecundity, and allelopathic tendencies that allow it to outcompete native species. Significant alterations to the diversity and quality of the watershed vegetation are not anticipated

AIR QUALITY - *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

Determination: Air quality reduction may occur as a secondary effect of idling trucks waiting to fill at the reservoir, however significant effects are not anticipated to occur on this site at this time.

HISTORICAL AND ARCHEOLOGICAL SITES - *Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project if it is on State or Federal Lands. If it is not on State or Federal Lands simply state NA-project not located on State or Federal Lands.*

Determination: Not Applicable. The project is not located on State or Federal Lands

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY - *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

Determination: Water is currently legally available in the designated watershed. Impacts to senior water rights downstream of the reservoir to the connection with East Redwater Creek have been analyzed, and no adverse effect is expected based on the Applicant's calculations as reviewed by the Montana DNRC Water Resources office.

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

Determination: Rivers and streams in eastern Montana represent the lifeblood of the region. Conserving soil and water resources is vital to the future of agriculture and environmental in this area. This project does not detract from any known conservation plans or goals.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES - *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

Determination: The proposed site is not with a wilderness area or setting. Impacts to recreation are anticipated to be minimal.

HUMAN HEALTH - *Assess whether the proposed project impacts on human health.*

Determination: No known impacts are anticipated to affect human health.

PRIVATE PROPERTY - *Assess whether there are any government regulatory impacts on private property rights.*
*Yes___ No_**X**_ If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights.*

Determination: **NA**

OTHER HUMAN ENVIRONMENTAL ISSUES - *For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.*

Impacts on:

(a) *Cultural uniqueness and diversity?* None anticipated

(b) *Local and state tax base and tax revenues?* None anticipated

(c) *Existing land uses?* Small loss of farmland for the truck staging area & access.

(d) *Quantity and distribution of employment?* Increased employment through oilfield expansion & associated services.

(e) *Distribution and density of population and housing?* None anticipated

(f) *Demands for government services?* None anticipated

(g) *Industrial and commercial activity?* Purpose is to provide available water for oilfield development & servicing.

(h) *Utilities?* No significant impact anticipated.

(i) *Transportation?* Site will increase truck traffic on local roads.

(j) *Safety?* None anticipated, although increased truck traffic has the potential to detrimentally affect safety on public roads.

(k) *Other appropriate social and economic circumstances?* None anticipated

2. *Secondary and cumulative impacts on the physical environment and human population:*

Secondary Impacts: **None anticipated**

Cumulative Impacts: **Impact to human health and safety is anticipated to be relatively minor.**

3. *Describe any mitigation/stipulation measures:*

No mitigation measures have been planned on this project.

4. *Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:*

This proposed action came as an alternative to a former proposal under the same application. The former proposal was located on the apex of a bend in the river with significant probable impacts to wetland habitat. This alternative utilizes a pre-existing cleared site, free of wetlands and is generally preferable to the former proposal.

PART III. Conclusion

1. Preferred Alternative

Utilizing the proposed action, significant impacts are not expected to occur and the project will likely develop as proposed. A no action alternative exists, although unlikely.

2. Comments and Responses

Should the project proceed, it is the recommendation of the department to develop the site in the least disruptive manner. Erosion may be prevented with geotextile fabric to protect disturbed soils around the intake installation from sloughing into the reservoir.

Seeding the site disturbance with a native grass & forb seed mixture appropriate for is also recommended.

3. ***Finding:***
*Yes___ No_**X**_ Based on the significance criteria evaluated in this EA, is an EIS required?*

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:

An EIS is not required because the level of impact is not anticipated to be found significant. The term 'significant impact' has some level of subjectivity, in this context the level of significance is assessed from the paradigm of the responsibilities of a Water Resource Specialist. Other agencies and entities may find the proposed developments to be significant.

Name of person(s) responsible for preparation of EA:

Name: Jonathan Staldine
Title: water Resource Specialist
Date: March 4, 2013

References:

Smith, R.D., Ammann, A., Bartoldus, C. & Brinson, M.M. 1995. Wetlands Research Program Technical Report WRP-DE-9. An approach for assessing wetland functions using hydrogeomorphic classification, reference wetlands, and functional indices. <http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde9.pdf>. Accessed online, 5, November 2012.