UINTAH COUNTY

STATE OF UTAH

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November 16, 2012

VIA EMAIL: BLM_WO_Information_Quality_Guidelines@blm.gov

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Re: Request for Information Quality Act Review Based on Significant Data Disputes in the Oil Shale and Tar Sands Programmatic Final Environmental Impact Statement

Dear Ms. Sanford:

Uintah County requests that the Bureau of Land Management (BLM) consider and analyze new information documenting 2012 technological advances for the extraction of oil from shale and tar sands, and addressing the previously identified scientific controversies relating to the claimed environmental impacts of oil shale and tar sands development. The Oil Shale and Tar Sands Programmatic Draft Environmental Impact Statement (OS/TS PDEIS) was published in February 2012 and the Final OS/TS PEIS was made available on November 13, 2012. Uintah County is a cooperating agency on the PEIS and submitted comments during the scoping period and for the PDEIS. Uintah County identified a number of disputed data and scientific issues, including how the new extraction techniques for both oil shale and tar sands disturb less surface area, use less

water, leave a significantly smaller footprint, and the BLM's continued reliance on outdated information in its assumptions.

Claiming that the newer techniques were not commercially feasible, the OS/TS PFEIS retained older assumptions of environmental impact that are no longer accurate. Since the close of the comment period several companies have completed testing which confirms the economic feasibility of oil shale development. Consequently, the No Action Alternative (2008 Record of Decision (ROD)) and the Preferred Alternative would have the same environmental impacts, a fact which undercuts the rationale for the reduced availability of land for development. Uintah County asks that the new information be assessed pursuant to the Information Quality Act (IQA) procedures as requested in this letter and in addition be analyzed in a supplement with a 45 day public comment period.

1. IQA Procedures

The IQA imposes independent requirements on the handling of new data. The U.S. Department of Interior (DOI) and BLM both issued Information Quality Guidelines (IQA Guidelines) in conformance with Section 515 of Public Law 106-554.[1] The IQA Guidelines apply to information disseminated on or after October 1, 2002, including the information disseminated in the OS/TS PFEIS. *See* DOI IQA Guidelines, at 1, 10; BLM IQA Guidelines, at 4. The law and related Guidelines apply to third party information if BLM endorses, agrees with, or relies upon it as the basis of its decision. Guidelines for Information Disseminated by Federal Agencies, 67 Fed. Reg. at 8454-55, 8460; DOI IQA Guidelines, at 7; BLM IQA Guidelines, at 4.

Uintah County invokes its rights under the IQA Guidelines for review and correction of information that does not comply with the Guidelines. *See* DOI IQA Guidelines, at 3-6; BLM IQA Guidelines, at 10-14. Prior to disseminating information, BLM must ensure that the information is consistent with the relevant IQA Guidelines and that it is of adequate quality. DOI Information Guidelines, at 3; BLM Informative Quality Guidelines, at 10. Uintah County is an "affected person," which includes persons who may use, be benefitted by, or be harmed by the disseminated information, and is entitled to request correction of the information. BLM Informative Quality Guidelines, at 10.

This request for correction of information is not frivolous, duplicative, unnecessary, or unduly burdensome. *See id.* at 11. While BLM has already provided for comments on the OS/TS

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[1] Under the IQA, federal agencies are "to issue guidelines ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by the agency." Pub. L. 106-554, §515 (Dec. 21, 2000) (provided as a note at 44 U.S.C. §3516); *see* Guidelines for Ensuring & Maximizing the Quality, Objectivity, Utility, & Integrity of Information Disseminated by Federal Agencies, 67 Fed. Reg. 8452, 8458-60 (Feb. 22, 2002) (hereafter "Guidelines for Information Disseminated by Federal Agencies").

PDEIS, the information in the OS/TS PFEIS does not conform to IQA and Uintah County is entitled to request its correction. *See id.* at 12. Requests for correction of information in draft documents under the NEPA process are treated as a comment on the draft and a response will be included in the final document. DOI IQA Guidelines, at 5. If BLM cannot respond to a request in the response to comments for the action, then it will consider whether a separate response is appropriate. BLM IQA Guidelines, at 12.

IQA requires BLM to ensure that information it disseminates is developed from reliable methods and data sources, and that information is accurate, reliable, and unbiased. DOI IQA Guidelines, at 1; BLM IQA Guidelines, at 7. If BLM disseminates influential scientific information that analyzes the risks to human health, safety, and the environment, then it must ensure the objectivity of the information by following the principles in the Safe Drinking Water Act Amendments of 1996, 42 U.S.C. §300g-1. Guidelines for Information Disseminated by Federal Agencies, 67 Fed. Reg. at 8457-58, 8460; DOI IQA Guidelines, at 2. BLM shall use "(i) the best available, peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices; and (ii) data collected by accepted methods or best available methods." 42 U.S.C. §300g-1(b)(3)(A) & (B).

The same principle of using the best available data also defines BLM decisions. BLM IQA Guidelines, at 8. "Best available" refers to the availability of the information at the time an assessment was made weighed against the needed resources and potential delay compared to the value of the new information. *Id.* BLM may only rely on older information if the "conditions of the land and/or resources have not substantially changed or where collection of more recent information would not be cost-justified." *Id.* Requiring the best available science and data means that an agency should "seek out and consider all existing scientific evidence relevant to the decision" and that it "cannot ignore existing data." *Ecology Center, Inc. v. U.S. Forest Service*, 451 F.3d 1183, 1194, n.4 (10th Cir. 2006) (citing *Heartwood, Inc. v. U.S. Forest Service*, 380 F.3d 428, 436 (8th Cir. 2004)).

The OS/TS PFEIS's identification of Alternatives 2b and 2 as its preferred alternatives is not based on the best available science and data. As is discussed below, BLM uses the same information found in the 2008 FEIS. Chapter 3 and Appendix A are almost completely identical to the 2008 FEIS and do not discuss oil shale and tar sands extraction technology used by companies in the industry or the commercial advances made in the last four years. Omitting discussion of the current technology and feasibility of development violates IQA and the guidelines. Had BLM used the new information, then the no action alternative would have been equal to the preferred alternatives in terms of environmental impacts.

This request will not unduly delay final agency action and Uintah County can show a reasonable likelihood that it will suffer actual harm if the information is not used. DOI IQA Guidelines, at 3; BLM IQA Guidelines, at 12. If the information does not comply with the Guidelines, such that non-compliance presents "significant new circumstances or information relevant to

environmental concerns and bearing on the proposed action or its impacts," then BLM must remedy the situation by re-proposing a rule or supplementing an EIS. DOI IQA Guidelines, at 6. Uintah County has the highest potential for production of both oil shale and tar sands in the State of Utah. The current preferred alternative will limit any development to the small RD&D leases, thereby costing the County and other local government entities significant revenues.

When Uintah County submitted comments during the public comment period for the OS/TS PDEIS, the new information testing the technology and further substantiating its commercial feasibility did not exist. The OS/TS PFEIS does not comply with the IQA and IQA Guidelines because BLM relied on outdated and inaccurate scientific data. Therefore, BLM must correct or supplement the OS/TS PFEIS. *See* DOI IQA Guidelines, at 6. Uintah County expects a response from BLM on the request to correct the scientific data or supplement the OS/TS PFEIS within 60 days. *See* DOI IQA Guidelines, at 4; BLM IQA Guidelines, at 12.

2. Relevant New and Quality Information

The new information complements the issues raised by Uintah County in its April 2012 comments. BLM justified the revision of the oil shale and tar sands 2008 PFEIS based on the need "to take a *fresh look* at the land use plan allocation decisions made in the 2008 ROD associated with the Programmatic EIS, in order to consider which lands should be open to future leasing of oil shale and tar sands resources." 76 Fed. Reg. 21003 (2012) (emphasis added). It further states that:

> As there are *no economically viable* ways yet known to *extract and process oil shale for commercial purposes*, and Utah tar sands deposits are *not at present a proven commercially-viable energy source*, the BLM, through its planning process, intends to take a *hard look* at whether it is appropriate for approximately 2,000,000 acres to remain available for potential development of oil shale, and approximately 431,224 acres of public land to remain available for potential development of tar sands.

Id. (emphasis added).

The OS/TS PFEIS expresses "[t]he purpose and need for this proposed planning action is to reassess the appropriate mix of allowable uses with respect to oil shale and tar sands leasing and potential development in light of Congress's policy emphasis on these resources." OS/TS PFEIS at ES-1, 1-4. To date, BLM has failed to provide new information that would support the removal of 67% of the public lands from oil shale and tar sands leasing. BLM has not provided documentation to support revision of the 2008 ROD even though environmental concerns were at the center of the environmental groups' litigation and ultimate settlements with BLM. *See* Complaint at ¶¶63-67, 94-103, 109-12, *Colorado Envtl. Coalition et al. v. Salazar*, No. 09-cv-00091-JLK (D. Colo. June 16, 2009); Settlement Agreement at ¶¶1, 3, *Colorado Envtl. Coalition*

et al. v. Salazar, No. 09-cv-00091-JLK (D. Colo. Feb. 15, 2011); Settlement Agreement at ¶¶1-2, *Colorado Envtl. Coalition et al. v. Salazar*, No. 09-cv-00085-JLK (D. Colo. Feb. 15, 2011). The OS/TS PFEIS Preferred Alternatives are a replica discussion of an alternative that was previously rejected by BLM. *See* 2008 ROD at 22.

The new information contradicts the premise of the OS/TS PFEIS that oil shale and tar sands are not commercially feasible, OS/TS PFEIS at 2-38, 2-50 – 2-51, 2-60 n.20, 2-61, 2-75, 2-81, 3-247, 5-2, 5-45, and will have significant environmental impacts. OS/TS PFEIS at 4-17 – 4-162, 4-201, 5-12 – 5-22, 5-24 – 5-119, 5-133 – 5-138, 5-144 – 5-150. Since the 2008 ROD, several companies have been developing oil shale pursuant to the Research Demonstration and Development (RD&D) leases. The related advances in oil shale technology and actual experience with this technology by Red Leaf Resources Inc. and Enefit, two companies operating in Colorado and Utah under RD&D leases, demonstrate that these techniques are commercially viable. The results of recent testing confirm feasibility and compel supplementation.

a. Red Leaf Resources, Inc.

Red Leaf Resources, Inc. (Red Leaf) recently carried out a pilot test of its own oil shale extraction technology, the EcoShale In-Capsule Process (EcoShale Process), in Uintah Basin, Utah, which showed the technology was capable of extracting oil from oil shale. *Pilot Test*, Red Leaf, http://www.redleafinc.com/index.php?option=com_content&view=article&id=14:pilot-test&catid=12:results-demonstrated&Itemid=16; Exhibit 1, *Oil Shale Extraction Process Overview,* Red Leaf (Nov. 1, 2012) (Ex.1, *Red Leaf Extraction Process*). Detailed financial models also showed that the EcoShale Process would be highly economical at current oil prices and potentially at oil prices as low as $45-per-barrel. Ex.1, *Red Leaf Extraction Process*; *Oil Shale Facts*, Red Leaf, http://www.redleafinc.com/index.php?option=com_content&view=category&layout=bl og&id=4&Itemid=5. The EcoShale Technology has been subject to two external, independent reviews of its engineering and design elements. *Independent Evaluation*, Red Leaf, http://www.redleafinc.com/index.php?option= com_content&view=article&id=17&Itemid=24. The reviews affirmed most of the design aspects and supported the estimated Utah production cost economics (15% internal rate of return with a $38/bbl oil). *Id.*

The EcoShale Process uses low temperature heating that results in high quality feedstock. *Oil Shale Facts*, Red Leaf, http://www.redleafinc.com/index.php?option=com_content&view=category&layout=blog &id=4&Itemid=5. The EcoShale Process only uses about one-fifth a barrel of water per a barrel of oil, includes about a 12 month cycle from construction to reclamation, and results in reduced CO_2 emissions. *Id.* The overall use of water is limited to dust control, on-site worker needs, and reclamation. Ex.1, *Red Leaf Extraction Process*. The emissions profile is reduced because low emissions heating options, such as natural gas, are utilized with potential for recycling. *Id.*

b. Enefit

Enefit has had a long history of successful commercial oil shale production in Estonia. Exhibit 2, *Oil Shale Development Technology Summary*, Enefit (Ex.2, *Enefit Oil Shale Development*). In 2009, began to develop a new generation of Enefit technology that combines Eesti Energia's improved solid heat carrier process and Outotec's Circulating Fluidized Bed technology. *Id.* In 2011, Enefit collected 12 tons of Utah shale using its retorting technology. *Id.* The shale was tested in 2012 at other laboratories, which confirmed the ability of Enefit retort technology to produce oil and gas from Utah shale. *Id.* The quality of the raw oil produced was similar to raw oil produced by using other technologies. *Id.* Enefit's technology allows for a process that is energy self-sufficient, requires no external fuel, and uses no water. *Id.* Gas combustion and the use of excess heat provide more power than the process requires, which then can be used to generate heat and power for the process. *Id.* The ash residue that is produced contains no organic residual and can be used as a raw material in the construction industry. *Id.*

c. U.S. Oil Sands Inc.

U.S. Oil Sands Inc. has also been successful in developing technology that makes oil extraction from oil shale and tar sands feasible. U.S. Oil Sands Inc. has developed a bitumen extraction process that is applicable to surface mineable tar sands. Exhibit 3, *Bitumen Extraction Process Overview*, U.S. Oil Sands Inc. (Ex.3, *Bitumen Extraction Process*). It uses a naturally occurring and biodegradable solvent in conjunction with warm water to extract bitumen without stabilizing clays and other fine particles within the process water. *Id.* The extraction process has been proven through extensive pilot and field testing over a period of seven years. *Id.* There have been four prototypes ranging from 24 to 500 bbl/d tested both in the field and in the lab, and reviewed by independent engineers and suppliers. Exhibit 4, Cameron Todd Presentation to Uintah County, *Developing the USA's Largest Oil Sand Resources*, U.S. Oil Sands Inc. (Oct. 2011) (Ex. 4, Todd Presentation). Detailed financial models show the process to be highly economical at current oil prices. Ex.3, *Bitumen Extraction Process*.

The bitumen extraction process results in a smaller footprint, no tailings ponds, concurrent reclamation of mined areas once all oil sands have been extracted, and a moveable processing plant. *Id.* It uses water, but 95% of the water is recycled and the solvent is renewable and biodegradable. *Id.* The Utah Department of Environmental Quality's Water Quality Board recently confirmed Judge Allen's finding that impact on any potential ground water from the extraction process was de minimis or insignificant. Exhibit 5, *U.S. Oil Sands Receives Favourable Ruling from Utah Department of Environmental Quality*, U.S. Oil Sands, http://www.usoilsandsinc.com/documents/news/USO-2012-10-24-Press%20Release.pdf (Oct. 24, 2012) (Ex. 5, U.S. Oil Sands Press Release). In confirming the decision to issue a water discharge permit to U.S. Oil Sands Inc. for a Utah project, the Water Quality Board also highlighted the environmental attributes of the extraction process. *Id.* It uses clean, locally

produced natural gas as the fuel source for the process, and uses lower temperatures and energy. Ex.3, *Bitumen Extraction Process.*

d. Epic Oil Extractors LLC

Epic Oil Extractors LLC (Epic) has successfully developed and refined an aboveground extraction process for mineable tar sands deposits. Exhibit 6, Letter from Edward L. Diefenthal, President and CEO of Epic, to Uintah County Commissioners (Oct. 29, 2012) (Ex.6, Letter from Epic to Uintah County). Several independent engineering firms have examined the process and confirmed that it is the most economic oil sands technology available. *Id.* It is economical not only in today's elevated oil price environment, but could also compete when oil prices are around $40 per barrel. *Id.* It is the most environmentally responsible tar sands technology as it uses no water and produces no toxic tailings ponds. *Id.* It also allows for rapid reclamation, has a lower carbon-footprint, and uses no toxic chemicals. *Id.* The solvent used in the extraction process is environmentally safe and can be completely recycled after processing. *Id.*

e. American Energy Technologies, Inc.

Lastly, Ray Wallage, Chairman to American Energy Technologies, Inc. (AET) has been in the environmental chemical, microorganism business since 1989, which explains the feasibility of microorganisms to extract oil from oil shale. Exhibit 7, Raymond R. Wallage, Chair/CEO of American Energy Technologies, Inc., *A Microorganism Technology for Extracting and Recovering Hydrocarbons, Elements, and Minerals from Oil Shale & Tar Sands*, at 4 (2012) (Ex.7, AET). Mr. Wallage used BioCat, a safe, nontoxic, nonhazardous water based surfactant, and microorganisms to clean up chemical spills in the ground and water. *Id.* Mr. Wallage then used the microorganism to economically convert cellulose into fuel and to liquefy coal. *Id.* Mr. Wallage applies the same principles to use the microorganism blend to liquefy oil shale in order to more economically recover hydrocarbons and other elements and compounds. *Id.* The first field scale study proved that the microorganisms and accelerants in a mining tumbler could successfully liquefy oil shale in about 24 hours, and that the process could be scaled up to commercial levels. *Id.* at 5. In another field study, when the BioCat surfactant was added to the microorganism mixture, the liquefying of the oil shale could be accomplished in under 12 hours. *Id.* Commercial sized ore separators using centrifuge technology then separate the liquid blend into parts by weight removing 100% of the hydrocarbons and water. *Id.* at 2, 5.

AET tested the medium to poor quality shale to determine if its microorganism technology would be profitable. Mineral Labs in Golden, Colorado, found that the liquefied oil shale contained 39% silicon dioxide, 9.8% aluminum oxide, 7.9% calcium oxide, 5.3% iron oxide, and smaller traces of other elements. *Id.* at 3. The University of Utah, College of Mines and Earth Sciences, determined that the off gasses from the process had no particular distinction from the compositions of air. *Id.* Also, that the pre-processed ore and the processed ore contained the same volume of hydrocarbons, showing that the microorganism process does not affect the

hydrocarbons. *Id.* Activation Laboratories, Inc. in Ontario, Canada, reported a silver content of the liquefied shale at 0.5 parts per million and organic carbon between 10% and 11.6% by weight. *Id.* The scientist who provided the shale for the study estimated the hydrocarbon content was between 10% and 15%, confirming again that the microorganism process does not destroy the hydrocarbon component of the shale. *Id.* at 4.

Based on all these reports, AET determined the oxide components of the shale were worth 11.55 times the value of the oil. *Id.* The 1.8 trillion estimate for recoverable oil could mean oxides worth $1,247 trillion using commodity prices at the time. *Id.* If the nine trillion barrel number from the Department of Energy 1980 estimates is used, then the oxides could be worth $6,237 trillion. *Id.* at 2, 4. Not only is the microorganism process profitable, but it also benefits the environment. It uses no heat, has no air contaminants, and the remaining ore consist mostly of silicone dioxide and can be used for reclamation. *Id.* at 5.

3. Relevance to OS/TS PFEIS Alternatives

The new information about the underlying technologies directly relates to the OS/TS PFEIS assumptions on environmental impacts. The new technologies use less water, cause significantly less surface disturbance, and use less electrical power than assumed in the 2008 FEIS. By using outdated information as the basis to compare the alternatives, BLM justifies closing 67% of the public land previously classified as suitable for oil shale or tar sands development. The OS/TS PFEIS exaggerates the environmental impacts of oil shale and tar sands extraction and development. The OS/TS PFEIS states that oil shale and tar sands development will require more than one barrel of water for each barrel of oil, when far less water is required. OS/TS PFEIS at 4-3 – 4-4, 4-8 – 4-11, 4-34, 4-43 – 4-46, 4-50, 5-32, 5-36, 6-300. The OS/TS PFEIS makes equally significant errors in the size of the surface disturbance and amount of electrical power needed. *Id.* at 4-3, 4-7 – 4-8, 4-11, 4-13 – 4-14, 4-33 – 4-34, 4-145, 4-154 – 4-157, 5-3, 5-8, 5-26 – 5-27, 6-231. These outdated and contradicted assumptions of environmental impact allow BLM to conclude that oil shale and tar sands development is not commercially viable and that Alternatives 2b and 2 are the preferred alternatives. *Id.* at 2-37 - 2-38, 2-50 – 2-51, 2-60 n.20, 2-61, 2-75, 2-81, 3-247, 5-2, 5-45.

The failure to use new information about the oil shale and tar sands extraction techniques only confirms BLM's failure to look at new data. Several PFEIS chapters, especially Chapter 3 and the Appendices in the OS/TS PFEIS are largely unchanged from the 2008 FEIS. By excluding new information regarding oil shale and tar sands technology, BLM also failed to acknowledge scientific controversies regarding environmental impacts of oil shale and tar sands extraction and development. Unless BLM addresses these deficiencies, the proposed FEIS and ROD will suffer fatal flaws.

The new test information confirms the need to change the assumptions in the OS/TS PFEIS which conclude the new techniques are not commercially feasible. It also demonstrates the need

to alter the environmental analysis to reflect reduced environmental impacts from oil shale and tar sands development. NEPA requires a supplement to incorporate this new data. *See* 40 C.F.R. §1502.9(c).

The conclusion that oil shale and tar sands development is not commercially viable is inaccurate and ignores new and relevant information recently confirmed by Uintah County's comments. If the OS/TS PFEIS took the required *fresh look* at the 2008 ROD, then it would have to correct the PFEIS assumptions. BLM's failure to incorporate this new information or to address the scientific disputes violates the IQA and calls for revision or supplementation of the PFEIS.

4. The New Information Also Calls for Supplementation of the OS/TS PFEIS

As an independent basis for reconsidering the assumptions used in the PFEIS, Uintah County asks that BLM prepare a supplement to new information and technology regarding oil shale and tar sands extraction and development and revision of estimated direct, indirect and cumulative environmental impacts. This revision would also address scientific controversies that have an effect on the human environment in accordance with NEPA. 40 C.F.R. §1508.27(b)(4); *Middle Rio Grand Conservation Dist. v. Norton*, 294 F.3d 1220, 1229 (10th Cir. 2002). BLM must insure professional integrity, including scientific integrity, of the discussions and analyses in the EIS. 40 C.F.R. §1502.24. Uintah County has already put at issue the assumptions used in the PDEIS and the new information discussed provides additional grounds to issue a supplement to the PFEIS.

An agency must prepare a supplement to a draft or final EIS if "(1) [t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns or (2) [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. §1502.9(c)(1). A supplement may also be prepared if the agency determines that the purposes of NEPA would be furthered by doing so. *Id.* at §1502.9(c)(2). BLM further calls for supplementation when a new alternative is added that is outside the spectrum of alternatives already analyzed. BLM NEPA Handbook H-1790-1, at 29 (Jan. 30, 2008).

NEPA requires that an agency take a "hard look" at the environmental effects of the proposed action, even after a proposal has received its initial approval. *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989). While an agency need not supplement an EIS every time new information is made available, if the new information shows that the remaining action will "affec[t] the quality of the human environment" in a significant manner or to a significant extent not already considered, then preparation of a supplemental EIS is appropriate. *Id.* at 372, 374.

The successful oil shale and tar sands development by several companies using different technologies after the close of the OS/TS PFEIS public comment period is significant new

information relevant to environmental concerns and bears on the impact of the proposed federal action. BLM has not included this new information and data in its analysis of alternatives and their corresponding effects on the human environment. This information changes the assumed environmental impacts of Alternative 1, the No Action Alternative, and also the premise upon which the Preferred Alternatives rest. The new scientific information and technology show that oil shale and tar sands development is economically feasible contrary to the conclusions in the OS/TS PFEIS. Further, the use of this technology will have fewer environmental impacts, including less water, electrical power, and surface disturbance. *See Commonwealth of Massachusetts v. Watt*, 716 F.2d 946, 948-49 (1st Cir. 1983) (Supplementation of an EIS may be required when modifications to a proposed action, although lessening environmental impacts, also alter the overall cost-benefit analysis of the proposed action.). Therefore, supplementation of the OS/TS PFEIS is appropriate and would benefit the analysis of the alternatives and corresponding environmental impacts.

Supplementation is also appropriate because portions of the OS/TS PFEIS, such as Chapter 3 and the Appendices, are outdated. The assumptions from these sections (Chapter 3 and the Appendices) are carried throughout the analysis of the direct and indirect impacts in Chapter 2, and the cumulative effects analysis in Chapters 4-6. This outdated information and analysis dates from the 2008 PFEIS and was probably developed more than five years ago. BLM has a continuing duty to evaluate new information especially when it is relying on information from an EIS that is four to seven years old. *See Citizens Against Toxic Sprays, Inc. v. Clark*, 720 F.2d 1475, 1480 (9th Cir. 1983) ("In general, an EIS concerning an ongoing action more than five years old should be carefully examined to determine whether a supplement is needed."). This is especially true when the accuracy of the scientific assumptions is contested.

5. Conclusion

Uintah County appreciates the opportunities to comment during the OS/TS PEIS process. At this point however it is clear that there is a need for a new draft or a substantive supplement. Failure to incorporate the new information and address the scientific controversy regarding the anticipated impacts of new technology on extraction of oil from oil shale and tar sands will violate both the IQA and NEPA.

Sincerely,

UINTAH COUNTY COMMISSION

Darlene R. Burns

Darlene R. Burns, Chair

Michael McKee

Michael J. McKee

Mark D. Raymond

Mark D. Raymond

Exhibit 1

www.redleafinc.com November 1, 2012

Company Overview

Red Leaf Resources, Inc. was founded in 2006 and is a privately-held Delaware corporation based in Salt Lake City, Utah. The Company is focused on the production of high-quality oil extracted from oil shale resources using its own oil shale extraction technology, the EcoShale™ In-Capsule Process ("EcoShale Process"). Red Leaf holds leases on approximately 17,000 acres through the Utah of School and Institutional Trust Lands Administration. Utah leases are located in the Uinta Basin. Additional options to lease are held in Wyoming and consist of approximately 5120 acres. Red Leaf has also issued domestic and international licenses for the use of its EcoShale™ technology.

Process Overview

The extraction process has been proven through extensive pilot and field testing over a period of seven years. Detailed financial models have been prepared as part of Red Leaf's financing and in preparation for commercial operations. Modeling has shown the process to be highly economic at current oil prices. Red Leaf has recently entered into a joint venture partnership with an affiliate of Total S.A. for development of Utah projects. Additional partnerships and financing have also been completed allowing Red Leaf to move forward with first stage commercial development on its Seep Ridge Leases, Utah and to move forward with environmental and permitting work on other leases in Utah and Wyoming.

Advantages of the Process

Red Leaf has developed the EcoShale Process, with the following important attributes:

- The process does not require water
- Overall use of water for implementing a project using the EcoShale™ process is primarily associated with reclamation, dust control and on-site worker needs
- Overall water usage is expected to be less than a barrel of water per barrel of oil
- The process produces water that can be reclaimed and reused for dust control and reclamation further limiting the raw water use
- The emissions profile is lower than many technologies previously applied in part because low emissions heating options are utilized with potential for recycling and other heating efficiencies
- Processes can allow for rapid reclamation and reduced surface disturbance
- Depleted shale, although not exhibiting hazardous characteristics, can be environmentally managed or impounded
- CO_2 output is significantly reduced with the EcoShale ™ low temperature process and utilization of low CO_2 emitting heating fuels (such as natural gas)
- The technology is amenable to carbon capture and sequestration as such options become economic
- Sound methods exist to protect surface water and aquifers
- The process produces a high quality feedstock with an expected average 32+ API gravity weight

Exhibit 2

A. Enefit Has a Long History of Successful Commercial Oil Shale Production

Enefit was founded in 1939 and is the world's largest oil shale to energy company. Enefit owns and operates oil shale mines producing up to 18 million tons of oil shale per year and owns and operates the world's largest oil shale fired power plants with a total capacity of 2,380 MW. Estonia has also commercially produced oil from oil shale for almost 100 years. In total, Enefit has mined 1 billion tons of oil shale, produced 550 TWh of power, and produced more than 200 million barrels of oil. Enefit employs approximately 7,000 people.

Enefit's industrial oil production experience is unique in the world and is drawn from Enefit's more than 30-year history of commercially operating its patented technology. After decades of research, development, and operations, Enefit has designed and is in the process of building the most efficient oil shale production technology available anywhere in the world. This is an advanced, new generation technology, based on Enefit's commercially proven technology which has been operating in Estonia for more than 30 years. Enefit's newest generation oil shale plant will go into production in Estonia this year and will more than double Enefit's current oil production capacity in that country. Enefit desires to bring this same, new generation technology to the Uintah Basin in Utah to help America meet its domestic energy needs.

Enefit owns extensive private oil shale resources in eastern Utah, holds State leases, and is the holder of the White River Mine federal RD&D lease. Enefit plans to make substantial capital investments, without government financing, and provide approximately 2000 direct jobs to the State of Utah. Enefit plans to produce hundreds of millions of barrels of oil over the life of its Utah project. Decades of experience in the mining and development of oil shale resources in Estonia provide Enefit with the knowledge, technology, and expertise to responsibly develop oil shale resources in the United States in an environmentally safe manner that will meet or exceed all current federal and state environmental standards.

B. Enefit's Has a Proven Oil Shale Development Technology

Enefit's commercially proven technology allows oil extraction from fine oil shale particles. The base technology, developed by Estonian scientists and patented in 2005, has operated continuously in Estonia for more than 30 years. In 2009, Enefit and Outotec formed a joint venture to undertake co-development of a new generation Enefit technology. The new Enefit technology combines Eesti Energia's improved solid heat carrier process and Outotec's Circulating Fluidized Bed technology, increasing efficiency and decreasing air emissions. The key benefits of Enefit's technology are the following:

- Only operational fines technology available. More than 50 years of experience developing the solid heat carrier process and 30 years of operational experience in Estonia.
- The process is energy self-sufficient and no external fuel is required.
- Gas combustion and the use of excess heat provide more power than the process requires. Energy left in the spent shale is used to generate heat for the process.

- Heat from ash and stack gases is extracted for power generation.
- Retort gas with a high calorific value that is released in processing can be used for power generation.
- No organic residual is left in the ash, which can be used as a raw material in the construction industry.
- The oil extraction process is water free.

The modular design is essential to allow easy maintenance, process optimization, and streamlined adaptability to the individual characteristics of different oil shale deposits.

C. Enefit Has Produced Oil and Gas From Utah Shale Based On Its Proven Technology

In Q4 of 2011 Enefit collected 12 tons of fresh Utah shale via 21 6 inch core holes drilled to the specified mining horizon across 5 locations on its private property, which is also contiguous to the BLM leased property. This shale was shipped to Enefit's R&D center, owned by Enefit Outotec Technology (EOT), which is the owner of the Enefit retorting technology.

In the first half of 2012 EOT and other laboratories carried out a series of detailed testworks on the Utah shale, including the following:

- Oil shale crushing tests
- Combustion tests
- Detailed investigations of the raw shale
- Retorting testwork in the Enefit bench unit, including production of an oil and gas sample for further detailed analysis
- Detailed analysis of the oil, gas, water and ash produced

The detailed results of these tests are proprietary, but the testing did confirm the ability of the Enefit retort to produce oil and gas from the Utah shale. This testing demonstrated the adaptability of the proven Enefit technology to process the Utah shale. The testwork also confirmed that the quality of raw oil produced from the Enefit retort is similar to raw oil produced from the Utah shale using other technologies. The similarities in the raw (pre-upgraded) oil quality confirm that the upgrading and further refining of the shale oil that was demonstrated in the 1970's and 80's in the US would be applicable to oil produced from Enefit's holdings via the Enefit technology as well.

Exhibit 3

U.S. OIL SANDS

www.usoilsandsinc.com

Process Overview

US Oil Sands has developed a bitumen extraction process applicable to surface mineable oil sands. The process is an evolution of the hot water extraction process currently used to extract bitumen from oil sands, but improves on many of the less desirable aspects of the Clark Hot Water process. US Oil Sands uses a naturally occurring and biodegradable solvent in conjunction with warm water to extract bitumen without stabilizing clays and other fine particles within the process water. This allows the company to produce bitumen without generating tailings ponds.

The extraction process has been proved through extensive pilot and field testing over a period of seven years. Detailed financial models prepared for the commercial facility show the process to be highly economic at current oil prices.

Advantages of the Process

Land Impact

- Small footprint
- No tailings ponds
- Clean tailings
- Concurrent reclamation of mined areas once all oil sands have been extracted
- Moveable processing plant

Water Use

- Use of deep aquifers to supply process water
  - No impact to surface users – other human uses and wildlife
- 95% of process water is recycled within the process
- No tailings ponds generated from the process
  - No potential for wildlife contact with the tailings ponds
- Solvent is renewable and biodegradable

Energy Use

- Processing facility and mine are adjacent to one another to minimize haul distances
- Low temperature process
- Energy use is less than 1/3 of a typical in-situ bitumen production facility
- Low energy refining – Utah bitumen is low in sulphur and higher quality than Athabasca bitumens

Green House Gas (GHG) Emissions

- GHG emissions from US Oil Sands' extraction process are believed to be equal to or better than imported light oil
- GHG emissions are better than conventional US stripper well production

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- GHG emissions are better than California heavy oil
- US Oil Sands' extraction process will use clean, locally produced natural gas as the fuel source for the process
- US Oil Sands' extraction process does not involve any gas venting
- US Oil Sands' extraction process is a lower energy process compared to typical in-situ bitumen production
- Bitumen produced from PR Spring is more efficient to refine because it is a low sulphur, higher quality product

References

Developing the USA's Largest Oil Sand Resource, 2011 Utah Energy Summit (available on US Oil Sands' website (www.usoilsandsinc.com))

Utah Division of Water Quality, In The Matter of PR Spring Tar Sands Project, Ground Water Discharge Permit-By-Rule, No. WQ PR-11-001

Utah Division of Oil, Gas and Mining, Docket No. 2010-027 Cause No. M/047/0090 A – In the Matter of the Request for Agency Action of LIVING RIVERS, Petitioner; Division of Oil, Gas and Mining, Respondent – Request to Appeal the Decision of the Division of Oil, Gas and Mining Approving the Application of Earth Energy Resources to Conduct Tar Sands Mining and Reclamation Operations at the PR Springs Mine, Uintah County, Utah.

Exhibit 4

U.S. OIL SANDS

Developing the USA's Largest Oil Sand Resource

Cameron Todd
CEO US Oil Sands Inc.

A presentation to Uintah County
"Fueling Utah's Economy"
Energy Summit
October, 2011

Forward Looking Statements

This presentation and the Company's website referenced in this presentation contain forward-looking statements including expectations of future production and components of cash flow and earnings. Investors are cautioned that assumptions used in the preparation of such information may prove to be incorrect. Forward-looking statements in this presentation include, but are not limited to, statements with respect to: benefits of the "Ophus" extraction process, business strategy and strengths, capital expenditures, reserves, estimated production, discounted cash flows of future net revenue, commodity prices and costs, exchange rates, development plans and programs, tax effect, government royalty rates, and anticipated exploration and development activities. Statements relating to "reserves" involve the implied assessment, based on certain estimates and assumptions, that the reserves described exist in the quantities predicted or estimated and can profitably be produced in the future.

Forward-looking statements and information relating to implementation of the extraction process and production estimates is based upon management estimates and evaluations provided by independent third party consultants. Although management considers these assumptions to be reasonable based on information currently available to it, they may prove to be incorrect. By their very nature, forward-looking statements involve inherent risks and uncertainties, both general and specific, and risks that outcomes implied by forward-looking statements will not be achieved. We caution readers not to place undue reliance on these statements as a number of important factors could cause the actual results to differ materially from the beliefs, plans, objectives, expectations and anticipations, estimates and intentions expressed in such forward-looking statements.

These factors include, but are not limited to: changes in general economic, market and business conditions; the volatility of oil and gas prices; production and development costs and capital expenditures; the imprecision of reserve estimates and estimates of recoverable quantities of bitumen; the loss of key personnel; the marketability of production, defaults by third parties; unforeseen complications with patent applications or patent protection on extraction process; fluctuations in foreign currency and exchange rates; inadequate insurance coverage; compliance with environmental laws and regulations; actions by government or regulatory agencies, including changes in tax laws; changes in law or regulations; and US Oil Sand Inc.'s ability to access external sources of debt and equity capital; and the occurrence of unexpected events involved in the operation and development of oil sands properties. The risks outlined above should not be construed as exhaustive. Investors are cautioned not to place undue reliance on any forward-looking information

When relying on our forward-looking statements to make decisions, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Furthermore, the forward-looking statements contained in this presentation are made as of the date of this presentation US Oil Sand Inc. does not undertake any obligation to up-date publicly or to revise any of the included forward-looking statements, whether as a result of new information, future events or otherwise. The forward-looking statements contained in this presentation are expressly qualified by this cautionary statement.

Currency Used in Presentation Material:
All amounts herein expressed in USD unless otherwise stated.

U.S. OIL SANDS

Developing the USA's Largest Oil Resource

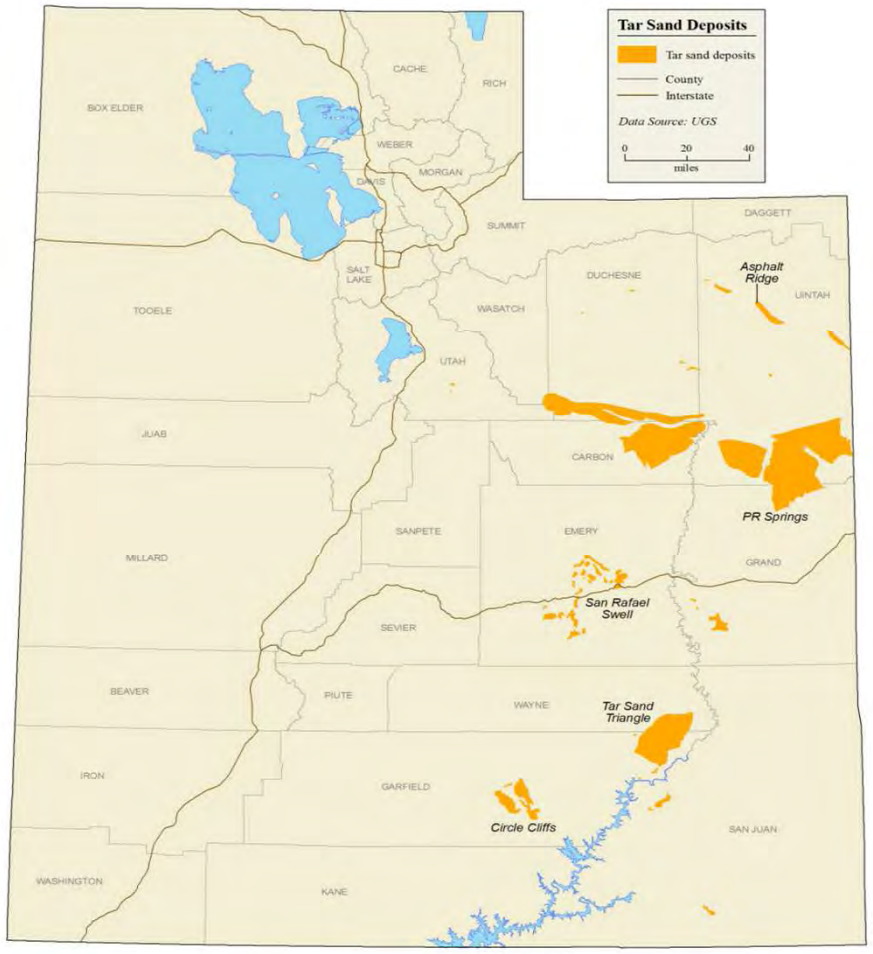
Outline

- Utah's Extensive Oil Sands Resources
- USO's Extraction Process Breakthrough
  - PR Spring Bitumen Mining Project
  - Environmental Leadership
  - Fueling the Economy
- Utah's Energy Future

Why Develop Oil Sands in Utah?

- Good business environment
- Sound regulatory framework
- Proximity to markets, low transportation cost
- Low cost operation
  - Access to infrastructure, services, mining expertise
- Higher quality bitumen
  - Low sulfur, lighter than Athabasca crude
- With good technology economics are attractive
- Jobs and economic growth
- Energy for America, value for Utah

Utah Has Over Half of US Bitumen Resources



- Well-defined resources
- Over 30 billion bbls. in place
- Over 50% of US bitumen
- More than total US conventional proved reserves which are 21 billion bbls.

U.S. OIL SANDS

Introduction to US Oil Sands

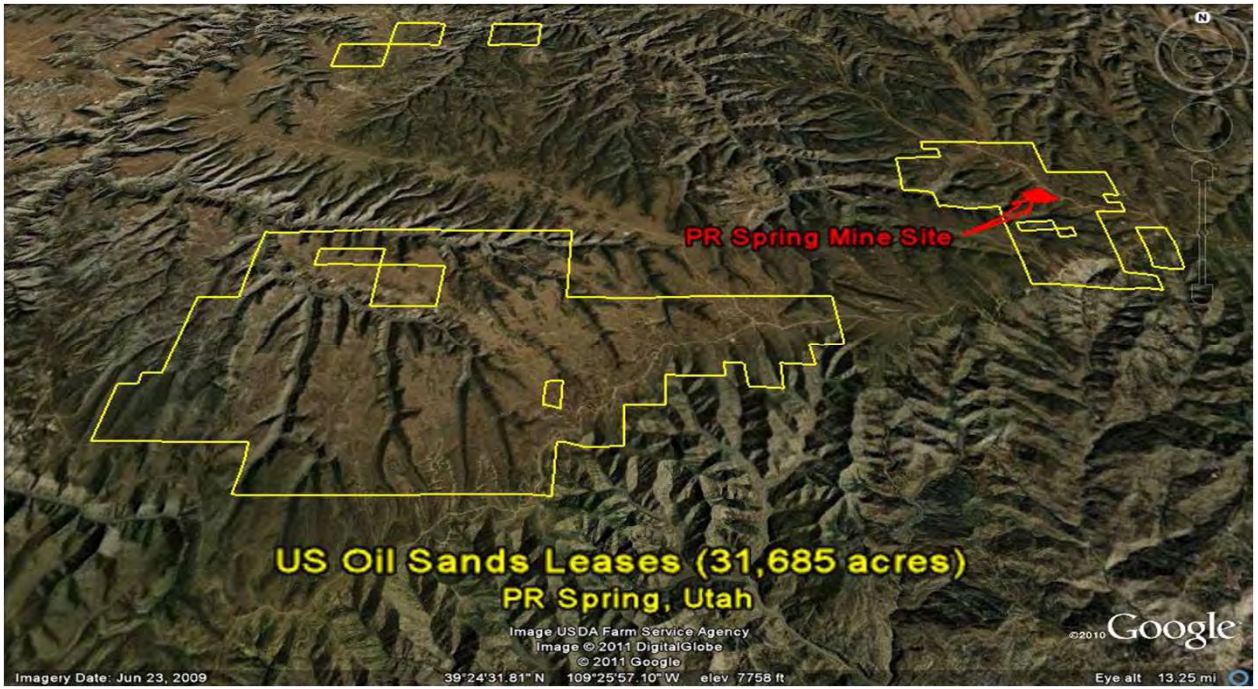
- Calgary based oil sands mining company (TSXV: USO)
- Public company listed on Toronto Venture Stock Exchange
- Proprietary extraction process enables clean bitumen extraction
- An "overnight sensation" 10 years in the making
  - 8 years as a private company prior to going public
  - Research and development
  - Land acquisition
  - Field testing
  - Project design
  - Pilot testing
  - Application and approvals
  - Drilling and resource assessment
  - Investment to date of $20 million

US Oil Sands - A Resource Development Company

- US Oil Sands is focused on developing its Utah bitumen resources
  - Largest commercial oil sand land position in U.S.
  - 32,005 acres 100% owned Utah mining leases
- Company expects to develop 50,000 BPD over next 10 years
  - PR Spring Project on stream in 2013 on first 5,930 acre block
  - Modular plants, sequential development, low capital cost
  - Additional development on significant exploration acreage
  - Expansion to new lands and international opportunities
- Small footprint, leading environmental performance
- No tailings ponds, rapid mine reclamation

Extensive Land and Resource Base

- PR Spring Mining Project Area
  - Multiple bitumen beds with combined thickness up to 100 feet
  - Average 20 feet overburden, 5%– 14% ore grade by wt.
  - Internal US Oil Sands estimate for 3 beds is 250 million barrels
- Significant exploration lands recently acquired, under assessment

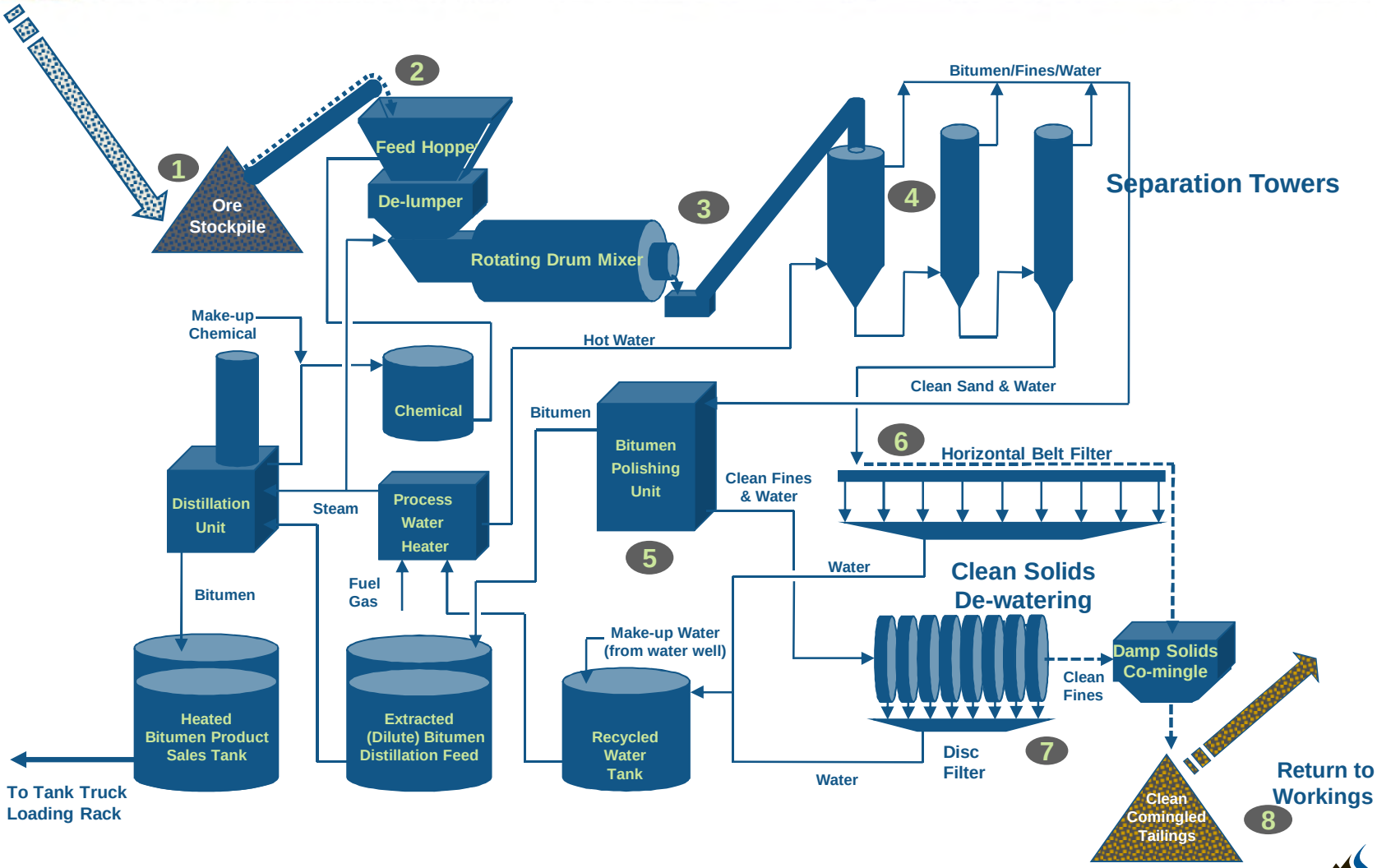


U.S. OIL SANDS

US Oil Sands Extraction Process

- Adaptation of existing Canadian processes
  - Addition of proprietary solvent process improves recovery
  - Process uses low mechanical energy, reduces clay suspensions
  - No tailings ponds required, reduced capital equipment
- USO process uses renewable biodegradable solvent
  - Increases bitumen recovery to 96%, solvent is recycled
  - Low water usage, 95% water recycle, no harmful chemicals
- Small modular plants
  - Low capex, rapid construction and deployment, early cash flow

US Oil Sands Extraction Process



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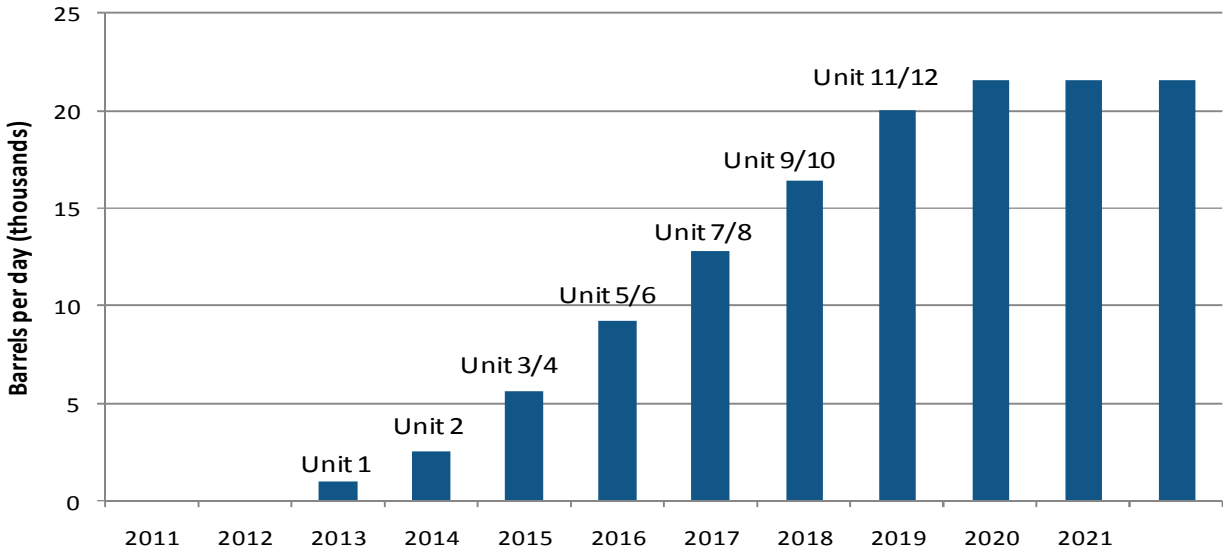
Production Growth in Phased Development

2000 bpd commercial process modules

- Modular construction allows flexible development
- Can be stand-alone, sequential or paired together
- Capital cost per module including the mine - $25 million
- Each module develops approximately 20 MM barrels
- 250 MM barrel resource supports 12+ modules (each for 30 years)



U.S. OIL SANDS

Best-in-Class Environmental Performance

Environmental Report Card

- Air quality: Best-in-Class
- Land footprint: Best-in-Class
- Water Impact: Best-in-Class
- Energy Usage: Best-in-Class
- GHG Emissions: Best-in-Class

Best in Class Environmental Performance

- Air Quality: Best-in-Class
  - Utah bitumen is low sulfur (sweet oil)
  - 90% less sulfur than Athabasca
  - Very low volatiles and fugitive emissions, no free gas

- Land Impact: Best-in-Class
  - Smallest footprint of any oil sands mining project
  - No tailings ponds
  - Small moveable process area
  - Clean tailings
  - Rapid reclamation

Best-in-Class Environmental Performance

- Water Quality and Protection: Best-in-Class
  - No use of surface water, deep well sources
  - 95% recycle, half the water of existing processes
  - No tailings ponds to seep, no harmful chemicals
  - No wildlife interaction at ponds
  - Solvent is renewable and biodegradable

- Energy Use: Best-in-Class
  - Process is located at the mine, short haul distance
  - Low temperature process
  - No heat loss in tailings ponds
  - Less than 1/3 the energy use of in-situ processes
  - Low energy refining due to low sulfur, higher quality oil

Best-in-Class Environmental Performance

- GHG's: Best-in-Class
  - Equal to or better than imported light oil
  - Better than conventional US stripper well production
  - Better than California heavy oil
  - Uses clean natural gas fuel source
  - No gas venting
  - Low sweetening, low fugitives, low volatiles
  - Low energy use
  - More efficient to refine, lower GHG's than other bitumen and many conventional oils

Fueling the Utah Economy

- Exploration, resource assessment and project design (2011)
  - $10 million direct investment
  - 40 direct jobs, 40+ service and support jobs
- Mine and process unit construction (1st 2000 bpd unit 2012-2103)
  - $25 million direct investment
  - 100 direct jobs, 100+ service and support jobs
- Each single unit in operation (30 years)
  - Annual operating expenses $18 million/yr
  - 50-75 full-time direct jobs
  - Royalties and lease payments of approximately $2 million/yr. at full capacity, (paid to SITLA)
  - Taxes (all levels of government) of approximately $5 million/yr.
- Over 30 year project life each unit is expected to result in
  - Expenditures of $750 million into the economy
  - Generate over 2500 person-years of direct employment
- US Oil Sands may construct as many as 25 units
  - Generate as many as 63,000 person years of direct employment
  - Contribute over $18 billion into the economy

Utah's Energy Future

Utah has the potential for in excess of 100,000 BPD of bitumen production

- By developing < 5% of its bitumen resources (1 billion barrels)
- Generating in excess of $100 million/year in royalties and lease payments, a total of $3 billion to public schools
- Generating $250 million/year in taxes or $7.5 billion total
- Spending over $30 billion in total investment and expenses
- Generating in excess of 125,000 person-years of direct employment
- Generating as much as 375,000 man years of associated employment and injecting over $100 billion into the economy

  (using indirect multipliers and including taxes, royalties, investment and expenses)

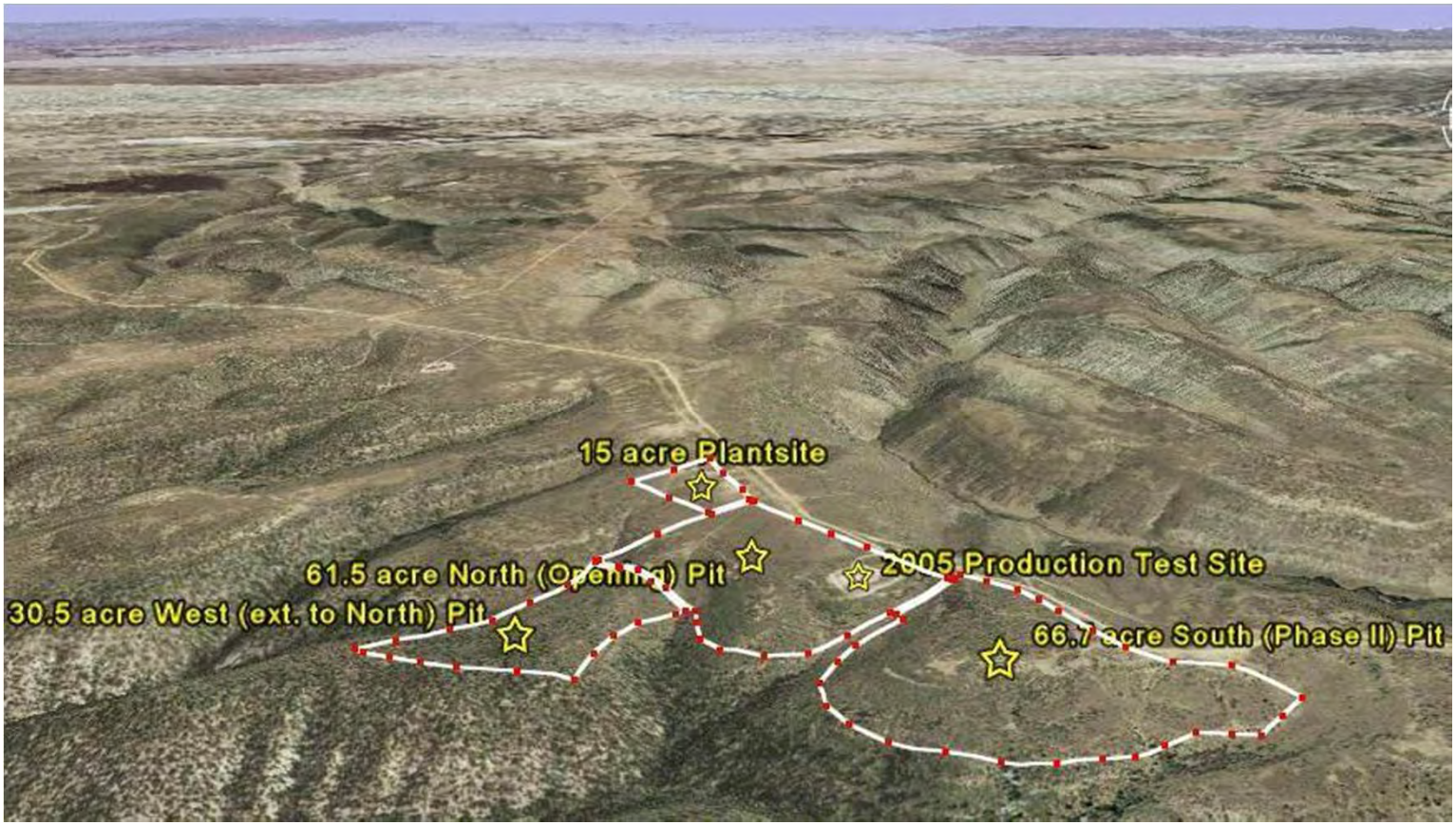
How Do We Make It Happen?

- We need pioneers
  - Technologies
  - Risk capital
  - Early stage development is fragile
- Access to resource lands
  - Most land is federal, lack of defined process, need state support
  - Conventional oil & gas operators hold bitumen rights, sterilized
- Balanced approach to ”obstructionists”
  - Healthy debate and public discourse is good
  - Endless delaying tactics are not in public interest
  - Bring facts, not scare-mongering
- Clear and consistent regulatory process
- Services and community support

Appendices

U.S. OIL SANDS

Planned 2013 Development Area



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US Oil Sands Working in Harmony With the Environment

U.S. OIL SANDS

Mining Equipment – Wirtgen Surface Miner

Self-propelled/self-loading mining & ore conditioning machine

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An Adaptation for Oil Wet Reservoir Rock

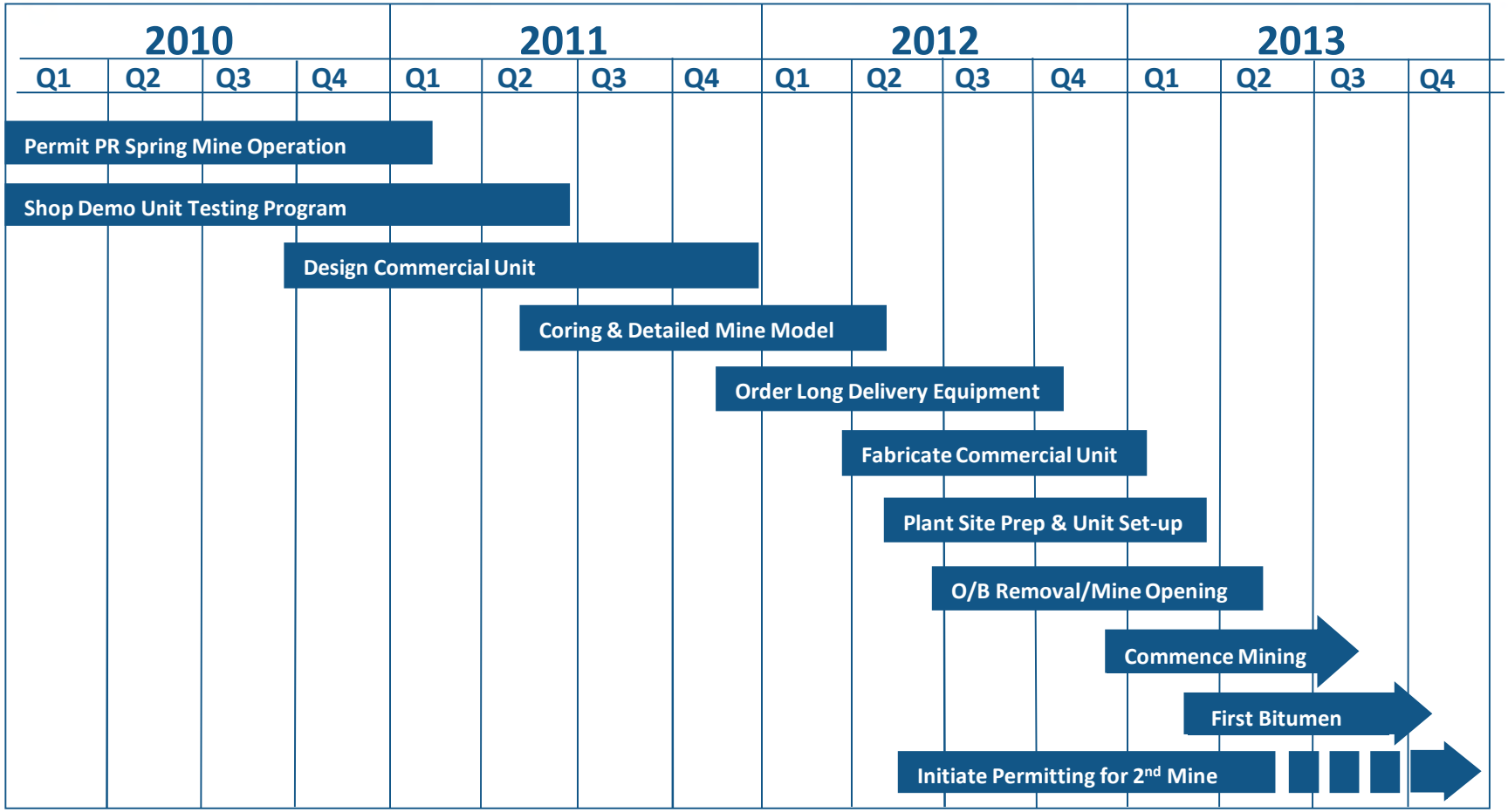
- Athabasca oil sands of Canada are "water wet"
  - Water sticks to the sand grains, bitumen and clay are in between
  - Clark process uses hot water to remove the oil
  - Hard to break oil-water-clay emulsions created in extraction process
- Most oil sands in the world (including Utah) are "oil wet"
  - Bitumen directly coats sand grain
  - Clark process is not effective in Utah
  - Leftover bitumen sticks to the sand
  - Low recoveries, creates oily sand waste
- US Oil Sands extraction uses bio-solvent to release the oil
  - Leaves clean sand, resulting in high bitumen recovery efficiency

Process is Tested and Scalable

- Extensive pilot testing is complete
  - Four prototypes ranging from 24 to 500 bbl/d
  - Tested both in the field and in the lab
  - Independent engineering and supplier review

- Commercial units are manageable 2000 bbl/d size
- Mining process is conventional
- Extraction process uses off-the-shelf equipment
- Design and supply through tested global partner

PR Spring Project Timeline



U.S. OIL SANDS

U.S. OIL SANDS

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Exhibit 5

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US Oil Sands Receives Favourable Ruling from Utah Department of Environmental Quality

CALGARY, ALBERTA October 24, 2012 – US Oil Sands Inc. ("**US Oil Sands**" or the "**Company**") (TSXV: USO), a company focused on oil sands exploration and production in Utah, today announced that the Utah Department of Environmental Quality's Water Quality Board voted by a 9-2 margin to support the Company's permit for its PR Spring Oil Sands Project. The decision will be published and effective once the order has been executed by the chairman of the Water Quality Board.

In its decision, the Water Quality Board confirmed the August 28, 2012 finding of Administrative Law Judge Sandra K. Allen ruling that the Department appropriately issued a water discharge permit by rule to US Oil Sands in 2008.

"The decision by the Water Quality Board further confirms Judge Allen's finding that substantial evidence indicates the absence of shallow ground water in the project area and that the company's proprietary process will have a de minimis, or "insignificant", impact on any potential ground water" said Cameron Todd, CEO of US Oil Sands. "The decision also highlights the outstanding environmental attributes of US Oil Sands extraction process which uses only a non-toxic bio-solvent derived from citrus to remove oil from the sands. Our process uses no tailings ponds and recycles 95% of its water. The PR Spring project remains on track for commercial startup late in 2013, and the decision ultimately illustrates the merits that our responsible approach to oil sands development has for the environment and local communities."

US Oil Sands has 100% interest in bitumen leases in Utah's Uinta Basin on which the company plans to develop an oil sands bitumen extraction project. In 2008 the Company received Utah state approval for a ground water discharge permit-by-rule, and in 2009 a large mine permit for the development of an oil sands mining project on the PR Spring Development lease. In 2011, subsequent to the Company's request for modification of the permitted project, a challenge to the modification and the original permit was filed by a Utah-based environmental organization which claimed the project would have a detrimental impact on groundwater in the area. A hearing to adjudicate this challenge was heard on May 15-16, 2012 by Sandra K. Allen, who ruled in favour of US Oil Sands and made her recommendation to the Water Quality Board.

ABOUT US OIL SANDS LTD.

US Oil Sands is engaged in the exploration and development of oil sands properties and, through its wholly owned United States subsidiary US Oil Sands (Utah) Inc., has a 100% interest in bitumen leases covering 32,005 acres of land in Utah's Uinta basin. The Company plans to develop its oil sands properties using its proprietary extraction process which uses a bio-solvent to extract bitumen from oil sands without the need for tailings ponds. The Company is in the pre-production stage, anticipating the commencement of bitumen production and sales in 2013.

The foregoing information contains forward-looking information relating to the future performance of the Company including information relating to the development and construction of the PR Spring Project and the commencement of commercial production. Forward looking information is subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those anticipated in our forward looking statements. Such risks and other factors include, among others, the actual results of exploration activities, changes in world commodity markets or equity markets, the risks of the petroleum industry including, without limitation, those associated with the environment, delays in obtaining governmental approvals, permits or financing or in the completion of development or construction activities, title disputes, change in government and changes to regulations affecting the oil and gas industry, and other risks and uncertainties detailed from time to time in the Company's filings with the Canadian securities administrators (available at www.SEDAR.com). Forward-looking statements are made based on various assumptions and on management's beliefs, estimates and opinions on the date the statements are made. Should one or more of these risks and uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described in the forward-looking information contained herein. The Company undertakes no obligation to update forward-looking statements if these assumptions, beliefs, estimates and opinions or other circumstances should change, except as required by applicable law.

Neither TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

For additional information please contact:

US Oil Sands Inc. Cameron Todd, CEO or Glen Snarr, President and CFO Suite #1600, 521 - 3rd Avenue SW Calgary Alberta Canada T2P 3T3 Tel: +1 403 233 9366 Email: info@usoilsandsinc.com Website: www.usoilsandsinc.com	Investor Relations Jeremy Dietz 300 5th Ave. SW, 10th Floor Calgary, Alberta T2P 3C4 Tel: +1 403 218 2833 jdietz@equicomgroup.com

Exhibit 6

epic OIL EXTRACTORS LLC

THE DRY TAILINGS OILSANDS TECHNOLOGY COMPANY

October 29, 2012

Uintah County Commissioners,

I am writing today to describe our successful oil sands technology and to thank you for your recent visit to our demonstration facility in Louisiana.

EPIC Oil Extractor's patented technology represents over $20 Million of investment. It was originally developed and has been refined here in the United States over the last 20 years. EPIC's technology is best-in-class, environmentally responsible and tailored for the tar sands resources of the United States.

Our technology is commercially ready. Our limiting factor is access to surface mineable tar sands deposits. Our inability to access US resources has hampered investment, domestic oil production, job creation and the environmentally responsible beneficial use of valuable US resources on federal lands.

EPIC's process and engineering has been examined by several independent engineering firms. Each of these have confirmed that our process is the most economic oil sands technology available. Our process compares favorably to that used in Canada, costing less than half of the operating costs and less than one third of the capital costs. Our engineering shows that this process is economic not just in today's elevated oil price environment but will compete at oil prices approaching $40 per barrel.

EPIC's technology is the most environmentally responsible oil sands technology available today. Our process uses no water and produces no toxic tailings ponds like those seen in Canada. Utilizing EPIC's solvent-extraction process allows for rapid reclamation of mining activities and supports a carbon-footprint less than one third the size of Canadian operations. EPIC's process uses no toxic chemicals; the EPA GRAS (*generally regarded as safe*) rated solvent is environmentally safe and completely recycled after processing.

EPIC's technology is not bench-scale. The demonstration facility you toured is our third successful scale-up. The Canadian engineering firm SNC Lavelin has performed detailed analyses and shown that it is scalable to 5,000 barrels per day and beyond. Our product is refinery ready and requires no need for costly upgrading or further processing.

I thank you for your recent visit to our demonstration facility. Our technology is proven, economic and environmentally responsible. Once EPIC gains access to tar sands deposits we look forward to contributing to domestic job creation, energy security and the environmentally responsible utilization of valuable US resources. We invite others to visit our facility to see this technology for themselves.

Regards,

Edward L Diefenthal

Edward L. Diefenthal
President & CEO
EPIC Oil Extractors, LLC

131 Airline Dr., Suite 202, Metairie, Louisiana 70001 USA T 504.830.5400 F 504.834.8966

Exhibit 7

A Microorganism Technology for Extracting and Recovering Hydrocarbons, Elements, and Minerals from Oil Shale and Tar Sands

Raymond R. Wallage, Chair/CEO, American Energy Technologies, Inc.

Abstract

Oil shale deposits are found in many parts of the world. They range in age from Cambrian to Tertiary and are formed in a variety of marine, continental, and lacustrine depositional environments. The largest known deposit is in the Green River Formation in the western United States. Per Wikipedia, the largest oil-shale deposits worldwide are listed in the chart below:

Deposit	Country	Period	Million Barrels
Piceance Basin	USA	Cretaceous	1,525,157
Green River Formation	USA	Paleogene	1,444,922
Uintah Basin	USA	Paleogene	1,318,964
Phosphoria Formation	USA	Permian	250,000
Eastern Devonian	USA	Devonian	189,000
Heath Formation	USA	Early Carboniferous	180,000
Olenyok Basin	Russia	Cambrian	167,715
Congo	Democratic Republic of Congo		100,000
Irati	Brazil	Permian	80,000
Sicily	Italy		63,000
Tarfaya	Morocco	Cretaceous	42,145
Volga Basin	Russia		31,447
St. Petersburg, Baltic Oil Shale	Russia	Ordovician	25,157
Vychegoodsk Basin	Russia	Jurassic	19,580
Wadi Maghar	Jordon	Cretaceous	14,009
Dictyonema shale	Estonia	Ordovician	12,386
Collingwood Shale	Canada	Ordovician	12,300
Timahdit	Morocco	Cretaceous	11,236
Italy	Italy	Triassic	10,000

From this chart, the United States has 4,908,043 million barrels, and Russia has 243,899 million barrels. Estimates of oil-shale deposits are complicated by several factors. First is the estimate's date, since new oil-shale deposits are found all the time. As an example, the undated chart above does not show deposits in China or Israel, where recent estimates may include these in the top two or three nations for oil shale deposits. Another is the amount of kerogen contained in oil shale deposits. This can vary considerably, affecting the amount of hydrocarbon therein. Next, some nations report the amount of kerogen, without considering how much kerogen may be extracted from their deposits using available technologies and other given economic and geologic conditions.

Various extraction methods yield different quantities of oil. As a result, the estimated amount of resources and reserves varies considerably. A standard method is the "Fischer Assay" which yields a "heating value" or measure of caloric output. It does not tell us how much oil can be extracted from a deposit. Some processing methods yield more useful oil than a Fischer Assay indicates. The Tosco II method yields over 100% more oil and the Hytort process yields between 300% to 400% more oil.

The Tosco II method (a refined Swedish Aspeco process), is an above ground ("ex-situ") retorting technology for oil shale. It uses fine particles of oil shale (the rock is crushed to a powder) and heated in a rotating kiln. The Hytort process is an ex-situ process developed by the Institute of Gas Technology and is classified as a reactive fluid process, producing oil by hydrogenation. There are variations of the above processes, and in-situ ("in place") and combination in-situ and ex-situ methods.

United States Department of Energy ("DOE") 1980 Estimates

America has enormous reserves of oil. Most found in the chaparral ("high desert") areas of Colorado, Utah and Wyoming in rocks known as "oil shale". In 1980, the DOE estimated total American oil shale deposits over 12 trillion barrels of oil, based on gallons per ton ("gpt"). The largest deposit of oil shale, estimated over nine trillion barrels, is located in the Green River Formation in Colorado, Utah and Wyoming. This includes the Green River, Washakie, Uintah, and Piceance Creek Basins. The Central Eastern States were believed to contain over one trillion barrels, and Alaska's overall oil shale deposits were simply described as "large". The DOE then contradicts itself with another estimate, stating: "Potentially Recoverable Oil Share Resources in the Green River Formation at 1.8 trillion barrels."

Why different statements from the DOE? A high estimate of Nine trillion barrels, versus a low of 1.8 trillion barrels? The Company believes the majority of the difference is related to the current technologies used to recover oil from the oil shale. The Company has been told recovery may be as high as 100%. The differences in DOE statements, if examined in mathematical terms, might suggest an average recovery of 20%, which may have been normal for older technologies, for 1.2 trillion is exactly 20% of nine trillion.

Value of Oil-Shale Based on DOE 1980 Estimates.

Using a reasonable $60 for a 42-gallon barrel of oil, at 1.8 trillion barrels, the Green River Formation would bring in $108 trillion dollars. But, what if there was a process, a new process that could easily recover 100% of the oil, plus additional valuable elements and minerals? If so, it may be reasonable to begin looking at the potential value of the Green River Formation's nine trillion barrels. At the same $60 a barrel, the nine trillion barrels of oil would then be worth $540 trillion dollars. More than enough the royalties and taxes could be used to pay off the United States national debt.

What About the Other Valuable Elements and Minerals?

Using existing technologies, the recovery of additional elements and minerals is impossible because the hydrocarbons keep such locked up and not recoverable. But the Company's new patent pending, proprietary microorganism technology, which liquefies the oil shale, allows 100% of the hydrocarbons to be recovered. Once done, additional minerals and elements can be recovered using existing and off the shelf ore separation technologies. The Company did some field scale testing on a medium to poor quality shale because we wanted to know if processing such would be profitable.

Mineral Labs in Golden, Colorado Results.

They use an X-Ray Fluorescence (XRF)15 method. XRF testing shows the elements in a sample, testing for 31 major, minor and trace elements and 10 "rare earth elements." Not all elements or compounds are identified with XRF and others must have a high parts-per-million (PPM). Therefore, XRF is a good foundation, a quick picture, of what liquefied shale contains. XRF does not measure for hydrocarbons, gold group or PGM metals. The lab report is included in our attachments.

Here are the XRF results in order of percent by weight:

- ***39% silicon dioxide (SiO2):*** One of the most common ingredients in "dirt." It does not have a high value, but is used in glass, electronics manufacturing, cement production, etc.
- ***9.8% aluminum oxide (Al2O3):*** Used to produce aluminum. Bauxite is the most common ore processed for aluminum, being first converted to aluminum oxide through the Bayer process. This suggests it will be less expensive to use the aluminum oxide we recover. The Company suspects the aluminum oxide in oil shale allows a much better quality aluminum.
- ***7.9% calcium oxide (CaO):*** Used in mortar, plaster, glass production, paper, pollution control, farming, cooking, and other industrial and scientific applications.
- ***5.3% iron oxide (Fe2O3):*** It is valuable in various industrial applications, including magnetic storage devices and biomedical manufacturing.

Among other elements they found: 4.0% Magnesium Oxide (MgO); 2.9% Sodium Oxide (Na2O); 1.9% Potassium Oxide (K2O); 1.1% Sulfur (S); .36% Titanium Dioxide (TiO2); .28% Phosphorus Pentoxide (P2O5); .05% Manganese Oxide (MsO); .04% Barium Oxide (BaO); and others.

UNIVERSITY OF UTAH, COLLEGE OF MINES & EARTH SCIENCES.

As a public supported university, there was not much they could offer. But Utah is interested in the project because it will bring jobs to the state. The Company got this email after analyzing a sample of the liquefied shale:

> *"In the spirit of assistance with your efforts to develop technology for more effective energy recovery and utilization, we were able to analyze the samples you provided. The gas samples provided had no particular distinction, having a composition similar to air. The feed and tailings samples you provided seemed to contain the same amount of hydrocarbon material. Good luck with further efforts in your technology development."*

This means off gasses from the Process need not be captured, making our process more environmentally safe. From odor alone, the Company believes a small amount of methane comes from the microorganisms, but it does not appear to exceed amounts normally found in air. Also, the pre-processed ore and the processed ore contain the same volume of hydrocarbons, confirming the amount of the hydrocarbons are not affected by the Company's microorganism process.

Activation Laboratories, Inc. (Ontario, Canada).

This lab reported a silver content of the liquefied shale at 0.5 parts per million (PPM), which was expected. Using infrared technology, they reported total organic carbon between 10.0% and 11.6% by weight (average 10.8%). The scientist, who provided the shale for this demo, estimated the hydrocarbon content between 10%-15%, confirming the Company's process does not destroy the hydrocarbon component of the shale, and is profitable with poor quality shale.

Value of the Oxide Components of the Tested Oil-Shale.

Using commodity prices at the time, the Company was able to obtain values on the oxide components of the oil shale. From those prices we were able to determine the oxide components were worth 11.55 times the value of the oil. If this were to hold true with all qualities of oil shale, then the 1.8 trillion barrel estimate for recoverable oil, could mean the oxides are worth $1,247 trillion, and if one used the nine trillion barrel number the oxides could be worth $6,237 trillion.

Rocky Mountain Times Article.

An interesting note came from a Rocky Mountain Times article a few years ago. They attempted to estimate the amount of gold locked up in the Green River oil shale formation. They simply claimed there is more gold locked up in the United States Green River Formation than has ever been mined in the history of man. In many of the Company's early tests, there was visible gold and platinum in the liquefied sale; and in today's world, "visible" it is considered rich ore.

The Company's Patent Pending Microorganism Technology.

The Company's Chairman, Ray Wallage, has been in the environmental chemical, microorganism business since 1989, when he purchased the formula to an environmentally safe, nontoxic, nonhazardous water based surfactant, now called BioCat. In using BioCat with microorganisms to clean up chemical spills in the ground, or in the water, Wallage became used to working with microorganisms, learning which ones among the five trillion trillion ($>5x10^{30}$) bacteria alone would clean which man made contaminants.

Shortly after, Wallage became aware of the environmental movement, and attempted to find a microorganism to convert cellulose economically into fuel. Not just the fruit of a plant, but the stalks, stems, and leaves. Wallage found a microorganism mixture, that when "married" and "trained" properly (patent pending and cannot be disclosed in detail. Also I use non-scientific language herein), would liquefy cellulose. Archer Daniels Midland, Inc. was given a chance to experiment with the results and found them most effective. They wanted to buy the microbe formula, but would never agree to limit their work to cellulose, so the deal never went through.

Wallage then turned his attention to coal, and within lab scale discovered the same microorganism blend could be trained to liquefy coal, probably creating an economical and cleaner burning diesel fuel substitute. So far liquefying coal has only been accomplished at lab scale, but Wallage has no doubts about it being scalable to commercial sized ventures.

Finally, Wallage heard about the difficulties of current technologies to recover hydrocarbons from oil shale, and again wanted to see if his microorganism blend could be trained to liquefy oil shale. The first lab results were encouraging, but it took several weeks to liquefy oil shale. Some refining of the process brought the time to less than 24-hours, and running the numbers, this looked like a more economically way to recover the hydrocarbons and other elements and compounds from oil shale than all current technologies.

We then had to do a field scale study, and it was quite a challenge finding hardware that would allow the process to be scaled up. We first used a mining tumbler that would hold about 150 pounds of ore but never filled it much beyond 20 pounds, leaving room for the microorganisms and accelerants. The first field scale test went along smoothly and confirmed we could scale the process up to commercial levels. Although it still took about 24 hours to liquefy oil shale.

In August of 2011, we did another field scale study, and this time Wallage added his BioCat surfactant to the microorganism mixture. At certain dilution rates, BioCat was known to be a microbial accelerant. This time, liquefying the oil shale was accomplished in under 12 hours. With a little more tweaking, Wallage is confident he will be able to liquefy oil shale in eight hours or less.

Now the challenge was to determine how to separate the individual elements and compounds from the liquefied oil shale. The first answer proved to be commercial sized ore separators using centrifuge technology. These centrifuges are made in all sizes and quickly separate a liquid blend into parts by weight, with the hydrocarbons coming off first, then the water. We still have to do more experimenting to determine how to extract the oxides, the gold group and platinum group metals from the resulting sludge, but it is believed there are sufficient off-the-shelf technologies available for this.

The Next Concern is Environmental Safety and Friendliness.

We already learned from the University of Utah tests that our process has no air contaminants to be concerned with.

We use no heat in our process, other than to heat or cool our buildings, so there should be no additional demand on our country's resources to heat the shale.

Once we recover all we can from the liquefied shale, the remaining ore, or now dirt may be a better term, will consist mainly of silicone dioxide, a common ingredient in plain dirt, which can then be used for reclamation or sold since there is always a market for clean dirt. So, our process is environmentally friendly and safe.

For more Information Contact.

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