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State of Utah
DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

March 9, 2012

CERTIFIED MAIL
7004-2890-0000-6087-5918

Rob Dubuc
Western Resources Advocates
150 South 600 East, Suite 2AB
Salt Lake City, UT 84102

Subject: FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER FOR THE INFORMAL CONFERENCE ON THE DIVISION'S TENTATIVE CONDITIONAL APPROVAL OF RED LEAF RESOURCES' NOI FOR THE SOUTHWEST MINE #1 M/047/0103.

Dear Mr. Dubuc;

On February 24, 2012 an Informal Conference was held at the Utah Department of Natural Resources in Salt Lake City, UT. The purpose of the hearing was to: 1) present the basis for Living Rivers' comments on the Utah Division of Oil, Gas and Mining's Tentative Approval of Red Leaf Resources Notice of Intention to Commence Large Mine Operations for the Southwest #1 Mine M/047/10103; and 2) issue a final appealable ORDER determining whether the applicant has met the relevant rules and a Final Notice of Intention should be approved. As a result of a review of all pertinent data and facts, including those presented at the Informal Conference, the attached document constitutes the FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER.

Pursuant to Utah Admin Code R647-5-106(17) within **ten (10) days** of receipt of this ORDER, you or your agent may make a written appeal to the Board of Oil, Gas and Mining. Your appeal may be filed with Julie Ann Carter, Board Secretary P.O. Box 145801 Salt Lake City, UT 84115-5801. If you have questions regarding the filing, she can be contacted at juliecarter@utah.gov or (801) 538-5277.

If you have questions or concerns please contact me at (801) 538-5334.

Sincerely,

John R. Baza
Director Division of Oil, Gas and Mining
Informal Conference Hearing Officer

BEFORE THE DIVISION OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH

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IN THE MATTER OF THE INFORMAL CONFERENCE on the TENTATIVE CONDITIONAL APPROVAL OF RED LEAF RESOURCES NOTICE OF INTENTION TO COMMENCE LARGE MINE OPERATIONS FOR THE SOUTH WEST MINE #1 M/047/0103.	:	**FINDINGS OF FACT, CONCLUSIONS LAW, AND ORDER.** **CAUSE NO. M/047/0103**

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PROCEDURAL HISTORY

1. Pursuant to Utah Code Ann. § 40-8-13(6) and Utah Admin. Code R647-4-116 on October 20, 2011 the Division of Oil, Gas, and Mining ("DOGM") published notice of DOGM's Tentative Approval of Red Leaf Resources' ("Red Leaf") NOI to Commence Large Mine Operations for the Southwest #1 Mine M/047/0103 ("NOI").

2. On October 20, 2011 DOGM sent a letter to James Patten of Red Leaf notifying Red Leaf of the tentative approval and that the approval was conditioned on complying with Condition 1 stating: "**Thirty days (30)** prior to ground disturbance, please include in the plan either a groundwater discharge permit (including a permit by rule) from the Utah Division of Water Quality (DWQ), or a letter saying a permit is not required."

3. The thirty day public comment period on a tentative approval of a large mine NOI provided for under Utah Code Ann. § 40-813(6)(d)(ii) and Utah Admin. Code R657-4-116(2) and identified in the published Notice of Tentative Approval ended on November 28, 2011.

4. Pursuant to Utah Code Ann. § 40-8-13(6)(d)(i) and Utah Admin. Code R647-4-116(2) on November 18, 2011 Living Rivers' timely submitted a Protest to the Tentative Approval.

5. Living River's Protest identified four areas of concern: 1) the NOI failed to adequately account for the possible existence of susceptible groundwater resources in the area of the mine; 2) the NOI failed to account for the possible impacts to ground water in the area of the mine; 3) there is no evidence that Red Leaf intends to obtain or that DOGM intends to require a groundwater permit from the Division of Water Quality ("DWQ"), as required by DWQ regulations; and 4) the NOI fails to provide adequate information to show that the design of the EnShale (sic) capsules will be sufficient to prevent leakage of petrochemicals into the area surrounding the mine, and specifically into local perched groundwater aquifers.

6. Pursuant to Utah Code Ann. § 40-8-13(6)(d)(iii) and Utah Admin. Code R647-4-116(4), DOGM determined that Living Rivers' comments constituted "written objections of substance" and on February 9, 2012 sent notice of a Formal Adjudicative proceeding before the Division on the matter to Living Rivers and Red Leaf.

7. DOGM Director John Baza was designated Hearing Officer in the matter. Mr. Baza was represented by Emily E. Lewis of the Utah Attorney General's Office.

8. Pursuant to Utah Code Ann. § 40-8-13(6)(d)(iii) and Utah Admin. Code R647-4-116(4) a formal adjudicative hearing before the Division was commenced on February 23, 2012 at 9:15 a.m. at the Utah Department of Natural Resources building in Salt Lake City, Utah.

9. Pursuant to Utah Code Ann. § 63G-4-207 any person may file a signed, written petition to intervene in a formal proceeding. The Hearing Officer received no written petitions from anyone seeking to intervene in the formal proceeding.

10. Pursuant to Utah Code Ann. § 63G-4-202(3), deeming it prior to the issuance of a final order in the matter, in the public interest, and not unfairly prejudicial to the rights of any party, the Hearing Officer converted the formal adjudicative proceeding to an Informal Hearing.

11. The hearing was conducted informally pursuant to: Utah Code Ann. § 63G-4-203: Procedures for Informal Hearing; Utah Admin Code R647-5-106: Procedures for Informal Phase; Utah Admin. Code R647-5-107: Exhaustion of Administrative Remedies; and in the event of a conflict between Utah Code Ann. § 40-8-1 et seq, and implementing rules for Large Mine Operations at Utah Admin. Code R647, the Utah Administrative Procedures Act ruled.

12. Pursuant to Utah Code Ann. § 63G-4-203(1)(g) intervention in the Informal Hearing was prohibited.

13. Pursuant to Utah Code Ann. § 63G-4-203(1)(c) the parties were permitted to testify, present evidence, and comment on the four issues listed in Living Rivers' November 18, 2011 Protest.

14. Pursuant to Utah Code Ann. § 63G-4-103(f) the parties to the Informal Hearing were:

15. Living Rivers, represented by Rob Dubuc and Joro Walker of Western Resources Advocates. Elliot Lips of Great Basin Earth Sciences, Inc. testified on hydrology issues on behalf of Living Rivers.

16. Red Leaf Resources, represented by Denise Dragoo of Snell & Wilmer. Fran Amendola of Norwest, testified on the modeling and design of the EcoShale™ In-Capsule Technology ("Capsule") on behalf of Red Leaf. Bob Bayer, of JBR Environmental, testified on hydrology issues on behalf of Red Leaf. Laura Nelson, Vice President Energy and Environmental Development, Red Leaf Resources, provided comments on behalf of Red Leaf.

17. The Utah Division of Oil, Gas, and Mining, represented by Steven F. Alder of the Utah Attorney General's Office. Paul Baker, Environmental Manager, testified on the history of the permit on behalf of DOGM. Leslie Heppler, Mining Engineer III, testified about the mine design and ground water on behalf DOGM. Tom Munson, Hydrologist, testified on surface water on behalf of DOGM.

18. Also in attendance were: LaVonne Garrison, Assistant Director Oil and Gas, SITLA; Sonja Wallace, SITLA; Dana Dean, Assistant Director, DOGM; Earlene Russell, Administrative Assistant, DOGM; Samantha Julian, Director, Utah Office of Energy Development; John Nowoslawski, Manager Unconventional Fuels, Utah Office of Energy Development; Gibson Peters, Manager Conventional Fuels, Utah Office of Energy Development; John Weisheit, Living Rivers; and Jeff Hartley, Hartley & Associates.

FINDINGS OF FACT

Based on information provided at the Informal Hearing, testimony, and information in Division files, I make the following Findings of Fact.

19. These were the only two requirements under the Large Mining Rules at issue at the Informal Hearing were Utah Admin. Code R647-4-106.8, Depth to Ground Water, Extend of Overburden Material, and Geologic Setting, and Utah Admin. Code R647-4-109.1, Projected Impacts to Surface and Ground Water.

20. On April 28, 2011 Red Leaf Resources submitted Notice of Intention to Commence Large Mine Operations for Southwest #1, File # M/047/0103 ("NOI") to DOGM to expand its current small mine operation.

21. The Southwest Mine #1 is to be located on SITLA Mineral Leases (ML) 50150 and 43374. The acreage associated with the mine plan from ML 50150 includes Township 13 S, Range 23 East, Sections 19, 20, 29 and 30 (SLBM) comprising 1318.78 acres. The acreage associated with the mine plan from ML 43374 includes 320 acres in Township 13 South, Range 22 East, Section 36 (SLBM).

22. The NOI identified oil shale from the Mahogany Zone as the mineral to be mined and Red Leaf will use its in-situ EcoShale™ In-Capsule Technology to process the shale.

23. Page 33 of the original NOI's Narrative Statement included the statement "The Division of Water Quality (DWQ) is satisfied that Red Leaf's project does not impact water based on out pre-design conference review. A formal statement from DWQ is pending and will be provided as Appendix N to this document when available."

24. On July 20, 2011 the Paul Baker, Minerals Program Manager sent DOGM's Initial Review of the NOI to Red Leaf detailing comments Red Leaf needed to address prior to DOGM granting tentative approval of the NOI. A technical correction of this document was resent to Red Leaf on August 3, 2011.

25. In these comments DOGM requested Red Leaf make the following changes related to ground and surface water:

    1) to comply with R647-4-105.1: adjust Figure 14, Surface Water Resources Map, to add more detail on the drainages and to use different symbols for a perennial stream or river versus an intermittent stream or river, etc.;

2) to comply with R647-4-106.2: design sumps for a larger storm event;
3) to comply with R647-4-106.8: include a geology map and refer to the location in the text, label Figure 13 "Typical Stratigraphic Colum," rewrite several conflicting paragraphs based on the actual water table data provided; and
4) to comply with R647-4-109.1: make a technical correction to Figure 14, Surface Water Resources.

26. On Sept 6, 2011 Red Leaf Resources provided DOGM with responses to DOGM's comments and submitted a corrected NOI that replaced the hybrid NOI form/narrative statement application format with a NOI application in a narrative statement format.

27. On September 22, 2011 Red Leaf submitted an Application for Mine Plan Revision or Amendment seeking to replace: Figure 1, Vicinity & General Layout Map; Figure 5, Post Mine Topography; Figure 13, Typical Stratigraphic Column; Figure 17, Red Leaf Project Area Geology.

28. On September 27, 2011 DOGM accepted the Amendment and replaced the Figures in the NOI.

29. On October 6, 2011 Rob Herbert of the Utah Division of Water Quality sent a letter to Bob Bayer of JBR Environmental Consultants stating that DWQ had determined Red Leaf would need to submit a completed application for a ground water discharge for the Southwest Mine #1.

30. On October 7, 2011 Red Leaf submitted an Application for Mine Plan Revision or Amendment seeking to replace page 6, 18, 19, 27, 43, 46, 53, 54, 55, 58 (pages relating to comments made in DOGM's initial review) and to add Appendix K of the NOI. Reflecting the DWQ's request for a ground water discharge permit application, the language on page 33 of the original NOI (see finding 23), now renumbered page 42, was adjusted to reflect communications with DWQ.

31. Appendix K of NOI is titled "Executive Summary of Water Strategy for Red Leaf Resources" and describes how Red Leaf Resources will manage water resources at the mine site.

32. On October 17, 2011 DOGM accepted the Amendment and replaced the requested pages and added Appendix K to the NOI.

33. Page 37- 38 of the resubmitted NOI, entitled *106.8: Depth to Groundwater, Extent of Overburden Material and Geologic Setting*, includes a narrative description of the ground water in the area. The description identifies groundwater associated with the Mesa Verde Group as the uppermost aquifer of regional extent in the permit area. As indicated by DOGM's own oil and gas files, the top of the Mesa Verde Formation is between 3000 -4000 feet below ground surface.

34. The NOI states that surface data from Price and Miller (1975) indicated the Parachute Creek and Douglas Creek members, formations within the project area that lie above the Mesa Verde Group, are key aquifers in the area. Red Leaf's narrative addressed this information in three ways: 1) demonstrating there are no USGS mapped springs issuing from either of these members in or near the parcels; 2) exploration drilling by Red Leaf did not encounter ground water; and 3) records of nearby water wells from the Utah Division of Water Rights indicate varying low amounts of ground water present.

35. At the Informal Conference, Leslie Heppler, Division Mining Engineer III, testified how she came to the conclusion Red Leaf's NOI met the requirements of 647-4-106.8. She stated,

> "in the form of a map, a geologic map that I was able to double-check with an Open-File report that was published by UGS. The report number was 549DM. And the geologic data was correct. There was also a typical cross section that was provided for the area that referenced the overburden material. And there was a narrative in the plan that described depth to ground water per our rule." Transcript pg. 50.

36. Similarly, Tom Munson, Surface Water Hydrologist, testified that Utah Admin. Code R647-4-105.1.12, "Maps, Drawings, and Photographs – perennial streams, springs and other bodies of water . . . within 500 feet of proposed mining operations" does not include any specific methodology explaining how an operator must identify springs. Transcript at 51. Mr. Munson determined that that Red Leaf's inclusion of USGS maps of seeps and springs was an acceptable means of meeting the relevant requirements of Utah Admin. Code R647-4-106.8. *Id.*

37. Page 40-42 of the NOI, is entitled, VI. R647-4-109 Impact Statement, 109.1 Projected Impacts to Surface and Groundwater Systems. The NOI states surface waters are generally not present being ephemeral/intermittent and that rainfall is generally low.

38. Page 41 of the NOI describes how Red Leaf intends to use best management and reclamation practices to mitigate any impacts to surface water if present. These practices include, among others: installing prior to earth disturbing activities water diversions, sumps, and ponds designed to account for a 100-year 24 hour storm event and perimeter ponds and ditches for runoff control. The NOI also includes Appendix E, a Drainage Control Plan.

39. At the Informal Hearing Mr. Munson testified he felt the NOI met the requirements of R647-4-109.1 stating,

> "[Red Leaf] . . . provided a very detailed – not a general – narrative in regards to surface water designed using definitely (sic) industry standards in regards to that information and have met the requirements of that rule, from our perspective. . . . [Red Leaf also] designed a storm water plan using all appropriate . . . standard design events, and actually went above and beyond what we would have required for that design . . . which will work, I thought, very well based on my technical expertise of 29 years as a surface water hydrologist working on hundreds of mines." Transcript at 52.

40. Page 42 of the NOI states that ground water is not susceptible to any impacts from the mining and retorting operations because it is isolated from those operations by several hundred feet of low permeability marlstones.

41. Ms. Heppler testified she reviewed the NOI and concurred with the conclusion that there was no potential for groundwater impacts and R647-4-109.1 was satisfied stating "based on their design of using a bentonite amended soil and also the natural occurring geology, anywhere

from five feet of a low transmissivity shale . . . way up to 500 feet . . . its belt and suspenders. There is double protection there." Transcript at 53.

42. After reviewing the NOI and reflecting Red Leaf's communications with DWQ, on October 20, 2011 DOGM sent a letter of Conditional Tentative Approval to James Patten of Red Leaf conditioning approval on complying with Condition 1 stating "thirty days (30) prior to ground disturbance, please include in the plan either a groundwater discharge permit (including a permit by rule) from the Division of Water Quality (DWQ), or a letter saying a permit is not required."

43. On October 20, 2011 DOGM published a Notice of Tentative Approval in the Vernal Express and Salt Lake Tribune and sent the Notice to John Blake of SITLA and Matt Cazier of the Uintah County Planning and Zoning Commission.

44. On December 21, 2011, JBR Environmental Consulting, on behalf of Red Leaf, submitted to DOGM the entirety of their Utah Ground Water Discharge Application Permit Red Leaf submitted to DWQ ("Discharge Permit Application").

45. On January 11, 2012 the Division accepted the amended NOI and added the Discharge Permit Application as Appendix S to the NOI.

46. On February 10, 2012 Rob Herbert, P.G. Manager for Utah Division of Water Quality Ground Water Protection Section, requested additional information from Red Leaf to complete DWQ's review of Red Leaf's Ground Water Discharge Permit Application.

CONCLUSIONS OF LAW

47. Utah Code Ann. § 40-6-4(1) states, "The [Board of Oil, Gas and Mining] ("Board") shall be the policy making body for the Division of Oil, Gas and Mining."

48. Utah Code Ann. § 40-6-15 states, "The [Division of Oil, Gas and Mining] shall implement the policies and orders of the board and perform all other duties delegated by the [Board of Oil, Gas and Mining] . . . The person[s] administering the mining program shall have the technical background to efficiently administer that program."

49. The Utah Supreme Court has held that "an administrative agency should be allowed comparatively wide latitude of discretion in performing its responsibilities." Petty v. Utah State Bd. of Regents, 595 P.2d 1299 (Utah 1979). See also, Ricker v. Board of Ed. of Millard County School Dist., 396 P.2d 416 (Utah 1964) (The law does not favor limitations on powers of administrative body but favors giving the body a free hand to function within the sphere of its responsibilities).

50. Utah Admin. Code R647-4-106, Operation Plan, states "The operator shall provide a narrative description referencing maps or drawings as necessary, of the proposed operations including: . . . (8) depth to groundwater, extent of overburden material and geologic setting."

51. Utah Admin. Code R647-4-109, Impact Assessment, states "The operator shall provide a general narrative description identifying potential surface and/or subsurface impacts. This description will include, at a minimum: 1) Projected impacts to surface and groundwater systems; . . . [and] (5) Actions which are proposed to mitigate any of the above references impacts."

52. The "sphere of responsibilities" of Division staff related to applications for a Large Mine Operation is to use their technical subject matter expertise to administer the Board's policy decisions by applying the Board's Large Mining Operations rules, Utah Admin. Code R647-5 et seq., to an application as submitted.

53. The Large Mine Operation ground and surface water rules are broad and do not delineate specific methodology to determine if a rule is met leaving that decision in the discretion of DOGM staff.

54. The Division properly used their expertise, *see* Findings 24, 25, 35, 36, 39,41, to determine that Red Leaf's NOI met the relevant requirements, *see* Findings 33, 34, 37, 38, 40, 42, of R647-4-106.8, Depth to Ground Water, Extend of Overburden Material, and Geologic Setting, and R647-4-109.1, Projected Impacts to Surface and Ground Water.

55. In their testimony, Living Rivers raised several policy concerns outside the scope of this proceeding to determine if Red Leaf met the relevant Large Mine Rules. While not considered at the Informal Conference, their concerns may be addressed by the Division in future discussions of modifying regulatory policy relative to other prospective oil shale/tar sands mining applications.

ORDER

1) The Tentative Conditional Approval approved on October 20, 2011 is now final.

2) Red Leaf Resources must still comply with Condition 1: "Thirty days (30) prior to ground disturbance, please include in the plan either a groundwater discharge permit (including a permit by rule) from the Utah Division of Water Quality (DWQ), or a letter saying a permit is not required."

3) DOGM reserves all enforcement and inspection rights under R647-6 et seq. to monitor the Southwest Mine #1 to ensure ground and surface waters are adequately protected if Red Leaf complies with Condition 1.

RIGHTS OF APPEAL

RIGHTS OF APPEAL

This ORDER may be appealed to the Board of Oil, Gas and Mining in accordance with the procedures set out in R647-5-105(17) and R641-105-100 by filing a written Request for Agency Action with the Board within **ten (10) days** of receipt of the ORDER.

SO DETERMINED AND ORDERED this 9th day of March 2012.

John R. Baza

John Baza, Director
Division of Oil, Gas and Mining
Informal Conference Officer

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ADVOCATES
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SALT LAKE CITY UT 84102

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