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| I-504 | 16-5, a, 2nd para., line 6, DELETE remainder of paragraph beginning on this line. REASON: These matters are addressed in lease agreements. This constitutes interference by the DEC into landowner/operator contracts. | I-504 | This material is provided for public information. To provide information in the public interest is not "DEC interference into landowner/operator contracts". |
| I-505 | 16-6, 1st full para., line 2, DELETE sentence beginning on this line. REASON: The sentence exaggerates the potential impact. | I-505 | The sentence is a very neutral statement of fact. This description of potential adverse impact is appropriate to this section. |
| I-506 | 16-6, 3rd full para., line 4, DELETE the sentence beginning on this line. REASON: This is covered in contracts between operators and landowners and should not be a matter for regulation. The farmer is being compensated for the use of his land or has benefitted from low-cost land. | I-506 | This sentence is included for public information purposes. |
| I-507 | 16-7, 1st full para., line 3, COMMENT: The DEC makes pre-site inspections, so it should not be possible that an important area will be unknowingly disturbed. | I-507 | The possibility that a significant habitat will be overlooked does exist because not all DEC inspection staff are trained botanists or biologists. |
| I-508 | 16-7, c, COMMENT: Erosion is a natural geologic process, not necessarily the result of any construction. | I-508 | Natural geologic processes can be greatly accelerated by construction activities. |
| I-509 | 16-7, d, COMMENT: The mitigation measures presently administered by the DEC have been found to improve wetlands. Concerning the last sentence in this section on p. 16-8, most trees in wetlands are already dead. | I-509 | Comment noted. A newly formed wetland often kills existing trees, but these are replaced by other species which are indigenous to wetlands. |
| I-510 | 16-8, e. 1st para., line 3, DELETE reference to visual impacts for reasons cited earlier in these comments. | I-510 | See Topical Response Number 2 on Visual Resources and Assessment Requirement. |
| I-511 | 16-8, f. COMMENT: - This is the type of contractual arrangement most operators have with landowners, not just the State, and it is the way it should be done. Existing mineral rights are also based on contract and should be observed rather than abrogated by regulation or permit condition after the fact. | I-511 | Comment noted. |
| I-512 | 16-10, line 1, COMMENT: Small amounts of hydrogen sulfide do not pose extreme health hazards. This is an overstatement. | I-512 | We disagree; the maximum amount of H ₂ S to which a person can be exposed for an hour without serious consequences is only 170 ppm. Respirators are usually recommended for exposure above 10 ppm. |
| I-513 | 16-10, 1st full para., QUESTION: How is a stock tank vented without having fumes escape? Line 3, CHANGE "recognize" to "notice" in this line. | I-513 | In the context of this sentence, an improperly vented tank would be one that is a nuisance. A vapor recovery system on a stock tank could be required under air quality regulations should circumstances warrant it. The suggested word change does not appreciably alter the intent of the sentence. |
| I-514 | 16-10, h, 1st para., line 5 ADD phrase to sentence ending on this line to read, "...however, many housing developments have been built near well locations by choice." COMMENT: Typically, houses in buffer zones were constructed after the well was drilled. | I-514 | The State currently has no regulations prohibiting the construction of housing in the buffer zone around wells which have already been drilled. |
| I-515 | 16-10, h, 2nd para., line 5, DELETE sentence beginning on this line. REASON: This is covered by lease agreement. | I-515 | The State must protect public safety even in the absence of a lease agreement to do so. |

- I-516 16-11, 1st full para., DELETE this paragraph. REASON: Visual impacts are too difficult to define. Lease rights allow storage tanks and other equipment that might be considered by some to have a negative visual impact.
- I-517 16-11, i. COMMENT on this section: Archeological maps are checked during pre-site inspection and further studies may be required if the proposed location is found to be in an archeologically sensitive area. It should be unlikely, therefore, that such areas will be accidentally damaged.
- I-518 16-12, j. COMMENT: Tree removal encourages growth of other flora, and this usually leads to increases in many animal species populations.
- I-519 16-12, 3. a. AGREE that most siting impacts are generally minor.
- I-520 16-13, 1st full para., COMMENT: This is not a problem in New York and can be controlled by an adequate erosion and sedimentation control plan.
- I-521 16-13, 2nd full para., COMMENT: The situations described in this paragraph are too extreme to be associated with oil and gas operations; they would usually occur in connection with large housing developments or removal of forests for farmlands. QUESTION: Concerning the statement that heavy sedimentation can lead to a shutdown of a public water supply, can an actual occurrence be cited? That much earth was never moved for oil and gas operations in New York.
- I-522 16-16, line 6, COMMENT: Note p. 8-26 of GEIS. This is an indication of the normal weathering process that will render oil innocuous and is in conflict with 8-26.
- I-523 16-17, 1st full para., line 7, CHANGE sentence beginning on this line to read, "Cement will filtrate into permeable aquifer zones."
- I-524 16-18, 2nd full para., line 1, CHANGE "will" to "may"; Line 4, CHANGE "can" to "may".
- I-525 16-18, 2nd full para., line 4, ADD sentence to this line to read, "This is an argument against grouting."
- I-526 16-19, c, line 2, CHANGE sentence beginning on this line to read, "Very few spills are the result of storage tank failures, and often are very minor problems."
- I-527 16-19, c, line 7, DELETE phrase "quite severely" in this line.
- I-516 See Topical Response Number 2 on Visual Resources and Assessment Requirement.
- I-517 Not all archeological sites have been identified in New York State.
- I-518 Comment noted.
- I-519 Comment noted.
- I-520 Comment noted.
- I-521 It is true that these impacts are more likely to result from larger construction activities. One incident resulting from oil and gas construction activities which affected a public water supply occurred in the Town of Westfield.
- I-522 The statements on this page are not in conflict with the comments regarding crop damage from brine and oil spills on page 8-26.
- I-523 The text is correct as written and more informative.
- I-524 Change "will" to "may" in line 1. In line 4, changing "can" to "may" would not appreciably alter the intent of this sentence.
- I-525 Since grouting is typically reserved for conductor or surface casing, the suggested addition is not appropriate in this discussion of production casing cementing operations.
- I-526 Since the draft GEIS was published, field staff have indicated that although storage tank failures do occur the majority of spills come from other sources.
- I-527 The text is correct as written.

I-528 16-20, 1st full para., line 5, COMMENT: In order to avoid tagging, the industry would agree to a plug greater than 15' in length.

I-529 16-20, 1st full para., line 11, DELETE #4, REASON: There are no data to support this statement.

I-530 16-21, 2nd full para., line 3, COMMENT: see 16-22. Statement on p. 16-21 cites many impacts. P. 16-22, 2nd full para., line 6 states that impacts are minimized by SPDES program. This latter statement is correct.

I-531 16-21, 3rd full para., line 3, DELETE "losses". REASON: existence of oil and gas operations should not be defined as a loss of land - it's a different use of land and the use of the land is compensated.

I-532 16-21, 3rd full para., line 4, DELETE "separator ponds, tanks". REASON: Loss may be less due to centralized nature of stock tanks and impoundments of secondary operations.

I-533 16-22, line 2, DELETE sentence beginning on this line. REASON: The EPA requires that an MIT be performed every two years under the UIC program for wells with uncemented surface casing to prove that there is no conduit for pollution.

I-534 16-22, line 4, DELETE sentence beginning on this line. REASON: Casing failure is not a routine occurrence.

I-535 16-22, 1st full para., line 1, QUESTION: What proof is available that there are thousands of unknown or deserted improperly plugged wells?

I-536 16-22, 1st full para., line 3, COMMENT: There is not enough pressure to cause fluids to migrate.

I-537 16-22, 1st full para., line 99, QUESTION: If the wells are unplugged and unmapped, how does the State know they are located in old waterflooded areas?

I-538 16-22, D. line 1, CHANGE "five" to "six" in this line.

I-528 Comment noted. See response to I-344.

I-529 The sentence is technically correct as written. The reason for requiring fluid between cement plugs is stated on page 11-3 of the GEIS. Note that in comment I-335 IOGA agreed with DEC's recommendation regarding density and gel-shear strength requirements for the mud placed between plugs.

I-530 See response to I-417. As previously stated, there are many more points of discharge in the old waterflood areas than there are SPDES permits.

I-531 Rewording the sentence as follows would be more correct: "Increased land use may occur more frequently due to . . ."

I-532 This list of waterflood facilities is included for public information. Although stock tanks may be centrally located at most waterflood operations, when the components of any enhanced recovery facility are taken as whole, they generally result in increased land use compared to standard oil and gas operations.

I-533 See response to I-415. As previously stated, not all New York wells routinely pass the mechanical integrity tests.

I-534 Delete the words "routinely fails" from this sentence and insert "can fail". New York's old oil wells, with their lack of cemented surface casing and long field life, fit the profile of wells statistically prone to corrosion failure.

I-535 The Division estimates that as of early 1988, over 61,000 wells had been drilled in New York since 1821. Only about 5,700 of these wells are known to have been plugged since 1971 when the Division began compiling statistics on plugged wells, and 14,377 known unplugged wells were reported by operators in 1986. This leaves approximately 41,000 wells of unknown status. This information was presented at the March 1988 Oil, Gas, and Solution Mining Advisory Board meeting. References are IOCC (1955), VanTyne (1967), and Reed, et al (1987).

I-536 See response to I-414.

I-537 It is common knowledge that the majority of the early wells were drilled in Allegany and Cattaraugus Counties, and that they were first waterflooded in the early 20th century. See response to I-535.

I-538 Although the suggested correction was appropriate when it was written, there are now five facilities operating; the Tully Valley Brine Field has been shut-in.

CHAPTER XVII. SUMMARY OF MITIGATION MEASURES

- I-539 17-1, 1st para., COMMENT: Special conditions or guidelines should be listed so that the operator knows that, if he is involved in a certain situation, certain things will have to be done. Special conditions attached to some permits should not be construed to be regulations and generally applied to all permits.
- I-540 17-2, c, line 6, ADD phrase at the end of "...and other nearby wells" to read "...within 1,320 feet of the proposed wellsite," REASON: Current spacing regulations specify this.
- I-541 17-2, c, COMMENT on EAF: Information now supplied on the EAF will either be specified in the GEIS or required by the new permit application form to be developed.
- I-542 17-3, line 2, COMMENT: All the information should flow through the Division of Minerals, even though other reviews are conducted by other government agencies. It would streamline the process and be less costly if an operator only had to answer to the Division of Minerals, unless a permit is required from another division. Even then, the Division of Minerals should be the lead agency.
- I-543 17-3, 2, a, line 4, ADD phrase to the sentence ending on this line to read, "...however, the proposals will not be binding." REASON: It is impossible to tell before a well is drilled what the final casing, cementing, completion, testing and stimulation procedures will be.
- I-544 17-3, B, 1, a, line 2, ADD "active", so that this lines reads, "...1,320 feet from another active well completed in the same formation." REASON: Other wells in the same formation could be plugged and abandoned.
- I-545 17-4, c, lines 1 and 2, DELETE references to access roads for reasons cited earlier in these comments.
- I-546 17-4, d, line 2, DELETE reference to access roads.
- I-547 17-5, e, QUESTION: Are permit conditions now in effect which specify the number and size of culverts?
- I-548 17-5, g, line 5, CHANGE "one acre" to "2.5 acres".
- I-549 17-5, g, line 6, DELETE lines 6 and 7. REASON: This is accomplished by lease agreement.
- I-550 17-6, k, line 2, DELETE "vicinity", REPLACE with "within the grounds of the historic site."
- I-551 17-6, k, line 4, DELETE this line. REASON: Visual screening is not necessary. Visual impact is temporary.

- I-539 Chapter 17 is a summary of mitigation measures likely to be necessary during various phases of oil, gas, solution mining, enhanced recovery, and underground storage operations. Examples of situations requiring special permit conditions (wetlands, floodplains, stream disturbance, etc.) are cited throughout the GEIS. The special permit conditions applied for the above situations are tailored to each site, and they are not construed as regulations or applied to all permits.
- I-540 The suggested addition is incorrect. 6NYCRR Part 552.2(b) lists well plat requirements.
- I-541 See Topical Response Number 3 on EAF and Site-Specific Permit Conditions.
- I-542 See response to I-21.
- I-543 As stated on page 7-5 of the GEIS, it is understood that the final completion program may be different from what is originally proposed. Notification and approval of the Regional permitting DMN manager is required for changes resulting in revision to the permanent wellbore configuration.
- I-544 As noted in the text, exceptions to the 40 acre spacing rule would apply for old oilfields and variances to the current spacing requirements could be granted as warranted. The sentence in the text is paraphrased from 6NYCRR Part 553.1(a) of the existing regulations. Reasonable alternative proposals will be considered during the rulemaking process.
- I-545 See Topical Response Number 4 on Access Roads as Part of Project.
- I-546 See Topical Response Number 4 on Access Roads as Part of Project.
- I-547 The floodplain permits issued by DEC's Division of Regulatory Affairs often contain permit conditions specifying number and size of culverts.
- I-548 Comment noted.
- I-549 See response to I-175.
- I-550 Suggested change would inappropriately alter the meaning of the sentence.

conditions are unnecessary unless the drilling site is on the grounds of an historic landmark.

I-552 17-6, 2, a, line 3, CHANGE this line to read, "...100 feet from public and private buildings, historical landmarks, or dwellings." COMMENT: If the drilling site must be moved, setback requirements should be amended appropriately.

I-553 17-6, 2, a, line 4, CHANGE "150" to "100".

I-554 17-7, b, CHANGE this section to read, "Plat Map. The plat submitted with the drilling permit application will show all water wells of public record within 1,000 feet of the proposed well site as shown on tax maps." REASON: Rig equipment varies, and the location of all well site facilities may not be known at the time the drilling permit is submitted.

I-555 17-7, c, line 2, CHANGE "45" to "180". REASON: Seasonal changes and other considerations may prohibit complete reclamation within 45 days.

I-556 17-7, d, COMMENT: Topsoil is not a commonly held natural resource.

I-557 17-7, d, line 7, CHANGE this line to read, "...cut well casing when plugging and abandoning in an active agricultural area to a safe..."

I-558 17-7, d, line 9, DELETE. REASON: The requirement to paraplow is unreasonable.

I-559 17-7, e, DELETE this section. REASON: It is covered by lease agreement.

I-560 17-7, f, COMMENT: The section on dikes should conform with existing federal SPCC requirements to eliminate confusion.

I-561 17-8, C, 1, g, line 2, DELETE phrase reading, "...must grout..." REASON: The sentence will then agree with existing cementing requirements.

I-562 17-9, h, 1, 5th subsection (centralizers), line 2, CHANGE "120" to "150".

I-563 17-12, q, 3rd subsection, line 2, COMMENT: IOGA does not believe grouting will achieve the DEC's objective.

I-564 17-13, line 1, DELETE phrase "after drilling operations have ceased". REASON: The operator may want to dispose of fluids during drilling operations.

I-565 17-13, 2, a, COMMENT: Providing a 24-hour notification phone number of someone with the authority to approve commencement of drilling operations would be very helpful.

I-551 The regulations also apply to lands adjacent to historic sites. If the well is a producer the visual impact could be long-term. Whether or not visual screening would be appropriate must be evaluated on a site specific basis.

I-552 Comment noted. Alternate proposals will be considered during the rulemaking process.

I-553 See response to I-552.

I-554 See response to I-138.

I-555 See response to I-145.

I-556 See Topical Response Number 7 on Soil as a Public Natural Resource.

I-557 See response to I-331.

I-558 We do not view this requirement as unreasonable. Plants may not be able to grow in areas unduly compacted by oil and gas activities, therefore, paraplowing may be necessary.

I-559 We do not agree. Please see comment I-168 where the commentator agreed with this proposed regulation.

I-560 See response to I-192.

I-561 See response to I-228.

I-562 The figure of 120 feet is in the cementing guidelines that were implemented on April 1, 1986. Alternate proposals will be considered during the rulemaking process.

I-563 Previous comments on problems associated with grouting have been noted. See response to I-238.

I-564 We concur that it is acceptable to dispose of fluids during drilling operations.

I-565 The Department does not approve the commencement of drilling. Rather, it approves of the drilling of a well via the issuance of a drilling permit. The operator then has the responsibility to notify the Department of the commencement of drilling 24 hours in advance of the start of such drilling operations. Spud notification is required so that drilling activities may be monitored. The best time to notify the Department is during normal business hours so that the information can be officially recorded. In any event, the Department maintains 24 hour telephone contact numbers which operators may use to transact business.

I-566 | 17-14, b, line 2, CHANGE "five" to "48 hours"

I-567 | 17-14, c, AGREE that the permit expiration date should be extended.

I-568 | 17-14, d, DELETE this section. REASON: Safety concerns are covered by OSHA, the Dept. of Labor, and other agencies in existing regulations. It is unnecessary and improper for the DEC to develop more regulations in this area.

I-569 | 17-14, e, line 4, ADD phrase so that this line reads, "...blow out preventers and personnel on location will have kick response..."

I-570 | 17-14, g, line 3, DELETE "to the surface" and REPLACE with "within the surface casing. Cement should be run in sufficient quantities to tag back to the next deepest casing."

I-571 | 17-14, j, DELETE this section. REASON: The DEC already has the ability to fine or prosecute violators.

I-572 | 17-15, k, line 7, CHANGE to read, "Seams must be effectively installed."

I-573 | 17-15, k, line 10, DELETE balance of paragraph beginning with "Base material shall be free...". REASON: This requirement is impractical, i.e., hay is frequently used to cushion the lining. The first part of section k covers all contingencies.

I-574 | 17-15, l, line 2, DELETE "longitudinally", REASON: This is not always the best method. Also, it will increase environmental impact by making the location size larger.

I-575 | 17-15, m, line 4, CHANGE "one" to "10".

I-576 | 17-15, o, DELETE this section. REASON: The Regional Division of Minerals manager should not be involved in the design or implementation of the testing program. This is proprietary information done at the discretion and expense of the operator.

I-577 | 17-16, l, a, COMMENT: The gas/oil ratio in the Bass Island regulations was initially enacted because it was determined by the State to be a matrix fed reservoir. Pressure testing in 1986 and subsequent temporary pooling by the State indicated that the reservoir is fracture-oriented, thereby invalidating the State's first determination. Also, increased ultimate recovery is in the operator's best interest.

I-578 | 17-16, l, c, DELETE this section. REASON: It is too vague.

I-579 | 17-16, 2, a, line 2, CHANGE "45" to "180".

I-566 | Reasonable alternative proposals will be considered during the rulemaking process.

I-567 | Support for extending the permit expiration date is again noted.

I-568 | See response to I-218.

I-569 | We agree that all personnel at the well site should have kick response training.

I-570 | Reasonable alternative proposals will be considered during the rulemaking process. This option is discussed on page 9-23 of the GEIS, where it is stated that permission may be granted to cement the production casing 50 feet into the surface or intermediate casing in special circumstances.

I-571 | As stated in the response to I-290, non-compliance has been a problem. Increased compliance is the goal of this recommendation.

I-572 | Reasonable alternative proposals will be considered during the rulemaking process. See response to I-293.

I-573 | Delete the word "grass". The sentence should read as follows: "Base material shall be free from angular rocks, roots and vegetation." Preparation of the base with hay is acceptable.

I-574 | See response to I-294.

I-575 | As previously stated, reasonable alternative proposals will be considered during the rulemaking process.

I-576 | As stated in the response to I-269, the Regional Minerals Manager must be aware of oil and gas activities in his or her region that have potential for adverse environmental impact.

I-577 | Comment noted. The Bass Island regulations were implemented to increase safety, prevent wasteful practices, and gather data to help understand the primary reservoir drive mechanism in order to ensure greater ultimate recovery. The reservoir characteristics of the Bass Island trend have been subject to debate ever since the first field production.

I-578 | As stated in the response to I-29, site-specific permit conditions are sometimes necessary to assure environmental protection and allow DEC to issue a negative declaration.

I-579 | Reasonable alternative proposals will be considered during the rulemaking process.

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| I-580 | 17-16, 2, b, COMMENT: It will be difficult to determine quantities of brine without having produced the well. | I-580 | As stated in the response to I-323, a conscientious operator will plan in advance for waste handling and disposal. |
| I-581 | 17-16, 2, c, COMMENT: This may lead to a false sense of security that mechanical equipment will operate properly at all times. | I-581 | A responsible operator would not rely solely upon the mechanical equipment, but would continue personal inspection of storage tanks to ascertain fluid levels and equipment condition. |
| I-582 | 17-18, j, line 3, ADD phrase at the end of this sentence to read, "...after the DEC has made three reasonable attempts to notify the owner." | I-582 | As stated in the response to I-341, it is understood that the State would make every possible effort to contact and inform the current operator of the need to plug the well. |
| I-583 | 17-18, 2, a, QUESTION: Why will it be necessary to submit a complete proposed abandonment procedure with the notice of intention? The information is given on the form itself. | I-583 | Replace the words "be accompanied by" with the word "include". |
| I-584 | 17-19, GENERAL COMMENT on b, c, d, and 4: These proposed regulations may conflict with federal requirements. | I-584 | As stated on page 15-17 of the GEIS, the DEC is working on developing a Memorandum of Understanding with the EPA in order to prevent conflicting requirements with respect to plugging and abandoning injection wells. |
| I-585 | 17-19, b, line 2, INSERT a comma between "injection" and "disposal" on this line. | I-585 | Correction noted. The comma should be inserted. |
| I-586 | 17-19, c, line 5, DELETE phrase beginning with "...or other approved fluids." and REPLACE with "as referenced in part d of this section." | I-586 | Correction noted. |
| I-587 | 17-19, d, line 1, CHANGE this sentence to read, "Intervals not occupied by cement shall be filled with fluid as specified by the Regional Minerals Manager." | I-587 | Correction noted. |
| I-588 | 17-20, line 5, QUESTION: Under what circumstances will tagging be required? | I-588 | Site specific field conditions will dictate necessity or lack thereof for tagging plugs. |
| I-589 | 17-20, g, 3rd subsection. QUESTION: In reference to placing 25 feet of cement in wellbore above - above what? | I-589 | The cement would be placed in the wellbore directly above the point where the injection tubing was severed. |
| I-590 | 17-21, k, line 1, DELETE "all", REPLACE with "three reasonable". | I-590 | See response to I-338. |
| I-591 | 17-22, 2nd subsection on Production casing with uncemented surface casing, line 2, DELETE "Every", REPLACE with Reasonable efforts". Line 3 of this section, DELETE phrase "including milling out the pipe." | I-591 | We agree that the words "Every effort" should be replaced with "Reasonable efforts". Under special conditions, such as gas leaking at the surface, milling out a section of casing might be appropriate. |
| I-592 | 17-22, m, QUESTION: Under what conditions will tagging be required? | I-592 | The DMN could require tagging of a plug anytime staff deemed it necessary to verify the cement top. |
| I-593 | 17-23, n, line 1, ADD "active" so that the beginning of the line reads, "In active agricultural..." REASON: If it is a fallow field, there is no reason to cut off casing below plow depth. | I-593 | See response to I-331. |
| I-594 | 17-24, d, line 2, DELETE sentence beginning on this line. REPLACE with, "Venting of annular gas is approved by the Department." | I-594 | This section is on flaring, not venting. Hence, the comment is not appropriate. See page 9-24 of the draft GEIS. |
| I-595 | 17-24, e, line 2, CHANGE "impervious" to "impermeable". REASON: Flow-through treatment ponds are allowed under SPDES permit. | I-595 | The suggested change is more technically correct. Change the word "impervious" to "impermeable". |

I-596 17-25, 2, b, line 1, DELETE sentence beginning on this line. REASON: Much of this information would not be available until the well has been drilled. Line 4, ADD phrase at the end of the sentence on this line to read, "...if available."

I-597 17-25, d, DISAGREE. REASON: This should be done at the operator's discretion.

I-598 17-25, e, line 2, DELETE "watertight tank", REPLACE with "or pits or tanks."

I-599 17-25, g, line 4, ADD phrase so that this line reads, "...step rate pressure or instantaneous shut-in pressure data test..."

I-600 17-26, h, line 3, QUESTION: How will this be determined?

I-601 17-26, j, line 1, DELETE "documentation", REPLACE with "volume".

I-602 17-26, k, line 2, DELETE phrase "...and produced".

I-603 17-29, H, 1, a, DEFINE "test well" as used in this context.

I-604 17-29, H, 1, b, line 2, DEFINE what is meant by "any operation" in this context.

I-605 17-30, k. DELETE this section. REASON: It is covered by lease terms.

I-606 17-31, b, line 2, DEFINE "major" in this context.

I-607 17-31, c, line 1, DEFINE "test well" in this context.

I-608 17-31, d, DELETE this section. REASON: Operators would certainly consider earthquake potential before making a substantial investment.

I-609 17-31, h, line 4, DEFINE "test well" in this context.

I-610 17-31, i, line 2, DELETE phrase beginning with "...and the proposed...permit application." REASON: All operators are required to dispose of mud in a proper manner.

I-611 17-31, j. DELETE this section. REASON: It is covered by lease agreement.

I-612 17-32, k, DELETE this section. REASON: The visual impact is no greater than that of any other business. Ninety percent of the material is underground.

I-613 17-32, l, DELETE this section. REASON: It is covered by present regulations under the Division of Regulatory Affairs.

I-614 17-32, m, COMMENT: This requirement already exists.

I-596 See response to I-410.

I-597 See response to I-127.

I-598 Agree with intent of the comment. The text should read "in watertight pits or tanks."

I-599 The suggested change is appropriate. Add the words "...by submission of the instantaneous pressure data (charts) from several nearby wells stimulated in the same zone or a step-rate pressure test..."

I-600 Any evidence of brine stress on surrounding or down gradient vegetation would lead to a determination of environmental damage.

I-601 Correction noted; change "Documentation" to "Volumes".

I-602 The suggested deletion is not appropriate.

I-603 A test well is a well drilled before the project is initiated for geologic information to determine the suitability of the reservoir for storage.

I-604 Change the phrase "...for any operation devoted to..." to "...for the conversion or excavation of any subsurface reservoir for..."

I-605 See response to I-474.

I-606 The word "Major" could be removed from this sentence without changing the intent. Any modification, defined as a change in storage capacity, would require a permit and SEQR review.

I-607 See response to I-603.

I-608 See response to I-451.

I-609 See response to I-603.

I-610 See response to I-462.

I-611 See response to I-463.

I-612 See Topical Response Number 2 on Visual Resources and Assessment Requirement.

I-613 It is appropriate to include permit conditions which might be required by the Division of Regulatory Affairs (DRA) under SEQR and attached to the DMN issued storage permit.

I-614 See response to I-471.

- I-615 17-32, n, COMMENT: This is too vague. What infractions and what mitigation measures are being considered? Routine operations should not be considered infractions.
- I-616 17-32, o, QUESTION: What procedures are being contemplated?
- I-617 17-32, q, COMMENT: Abandonment of facilities would occur approximately 20 - 30 years after discontinuing the storage operations.
- XVIII. ECONOMICS
- I-618 GENERAL COMMENT on this chapter. IOGA appreciates the separate chapter on the economics of the industry.
- I-619 18-1, 2nd para., line 4, QUESTION: Does this figure include regulatory personnel overseeing the oil and gas industry?
- I-620 18-1, 2nd para., 2nd line from bottom, CHANGE "most" to "some".
- I-621 18-1, 2nd para., last line, DELETE "nearby Pennsylvania", REPLACE with "neighboring states".
- I-622 18-2, 1st full para., line 2, ADD phrase at the end of the sentence on this line to read, "...however, localized areas in oil and gas producing counties have had higher unemployment rates, both currently and historically, and the loss of jobs related to oil and gas has had a much larger relative impact in these areas."
- I-623 18-5, C, 1, 2nd para., last line, ADD phrase so that the line reads, "...usually \$1 or \$2 per acre, depending on the history of nearby producing wells, for each..."
- I-624 18-5, C, 1, 2nd para., ADD sentence at the end of this paragraph to read, "If leasing costs become too high, it may affect the potential for drilling on the lease."
- I-625 18-5, C, 1, 3rd para., line 1, DELETE "equitable" so that the sentence reads, "With a leasing contract, the landowner can enjoy many benefits." ADD phrase to read, "Possible benefits of leasing are: 1) royalties from production..." ADD parenthetical phrase at the of 1) to read, "(an estimated \$6 million in royalties were paid in 1987)".
- I-626 18-5, C, 1, 3rd para., line 2, ADD the word "limited" before "free produced gas". ADD a sentence at 3) to read, "Operators are very concerned about the safety of homeowners' free gas hook-ups, which are not currently regulated or supervised by any

- I-615 We agree that this section is too vague. Examples of infractions would be brine spills or gas leaks caused by casing or tubing failures.
- I-616 See 14.J. for detailed procedures.
- I-617 Comment noted.
- I-618 You're welcome.
- I-619 The entire employment spectrum for the State is included in the multiplier effect.
- I-620 Changing the word "most" to "many" is more appropriate than changing it to "some".
- I-621 The suggested change does not appreciably alter the intent of this sentence.
- I-622 The suggested additional information is detailed later in the text.
- I-623 Add the phrase "...depending on the history of nearby producing wells, for each..."
- I-624 The suggested addition is not necessary. The point being made is obvious.
- I-625 The suggested changes do not appreciably alter the intent of the paragraph.

government agency." COMMENT on homeowner gas hook-ups: These could be permitted and regulated by the DEC, and the permitting fee could provide the State with another source of income. (NOTE: See Attachment #3, "Liability Risks of Free Gas Clauses".)

- I-627 18-10, D, 1, 3rd para., line 2, CHANGE "much" to "some".
- I-628 18-11, 2, a, QUESTION on this section: Why can't it be regulated?
- I-629 18-13, c, COMMENT on this section: AGREE that access roads are a benefit, yet throughout the GEIS, the DEC cites access roads as an adverse environmental impact.
- I-630 18-13, 3, 2nd para., line 2, DELETE "when gas is plentiful and cheap" and REPLACE with "in the summertime".
- I-631 18-14, 1st full para., line 4, DELETE sentence beginning on this line.
- I-632 18-15, 1st full para., line 6, DELETE sentences beginning on lines 6 and 7. REPLACE with "When water injection is halted, the integrity of the flood front is lost, gravity separation occurs, and the economic feasibility of the project may be greatly diminished. In most cases, reinstating a waterflood is impossible due to changes in relative permeability."
- I-633 18-18, G, GENERAL COMMENT on this section: It grossly exaggerates the affect of the oil and gas industry on the health of New York State's citizens.
- I-634 18-18, G, 2nd para., (Aquifer Permit), line 2, DELETE "\$1,500 to 3,000", REPLACE with "from \$3,000 to 10,000 depending upon the depth of the well."
- I-635 18-19, (Brine Blowdown), line 2, DELETE "\$200 to \$500", REPLACE with "\$800 to \$1,000".
- I-636 18-19, 2nd para., line 1, QUESTION: What is the net economic effect (in dollars) of past industry practices to society?
- I-637 18-19, 2nd para., line 6, COMMENT: The unspoiled wilderness may not belong to (be owned by) the people appreciating it. Visual impacts cannot and should not be regulated. There is an assumption that the wilderness is spoiled by oil and gas operations. Wilderness areas can be enhanced by these operations. The roads created by industry can allow the public greater access to wilderness areas.
- I-638 18-19, 2nd para., 2nd line from bottom. QUESTION: What is the estimate of decreased health care costs? What proof does the State have that industry caused increased health care costs? The assumption could certainly be made that industry salaries and taxes assisted in decreasing health care costs.
- I-626 Add the word "limited" before "free produced gas". The other suggested addition is not appropriate. For more information on the subject, see 18.D.2.a.
- I-627 The suggested change does not appreciably alter the intent of the sentence.
- I-628 The DEC does not have the appropriate technical staff to regulate landowner connections for free gas. In addition, landowner gas hook-ups are more of a safety issue than an environmental issue, and the Public Service Commission (PSC) regulates only high pressure lines. The PSC does not have personnel to cover the additional regulatory responsibilities. The DEC does not cite access roads as an adverse environmental impact. We maintain that access roads can have environmental consequences, and that they must be considered as part of the project for the environmental review.
- I-629 The DEC does not cite access roads as an adverse environmental impact. We maintain that access roads can have environmental consequences, and that they must be considered as part of the project for the environmental review.
- I-630 Change the sentence as follows: "...injecting it in the summertime when gas is more plentiful, and withdrawing it..."
- I-631 The suggested deletion cannot be considered without a given reason.
- I-632 The suggested change is more technically correct.
- I-633 This section was required to supplement the section on the costs of environmental regulation. The discussion on the health costs of environmental pollution gives a general outline of how the health costs are computed by lawyers and insurance companies. It does not specifically target the New York State oil and gas industry.
- I-634 The Division of Mineral Resources derived the figures listed in the GEIS from an informal survey of operators at the time the revised conditions were implemented. The commentator is welcome to supply documentation for the increased cost estimates. Many of the operators surveyed reported that they cemented production casing to the surface prior to the State requirement.
- I-635 Again, the figures in the GEIS are documented by information provided by operators. The commentator may wish to supply DMN with substantiation of the higher figures cited. Costs do increase with time and it is quite likely that those operators who complied with the brine pit elimination order when it was first issued four years ago paid less.
- I-636 The net economic effect (in dollars) of past industry practices is difficult to quantify.
- I-637 The requirement that visual impacts be assessed does not carry the assumption that wilderness is spoiled by oil and gas activities. See Topical Response Number 2 on Visual Resources and Assessment Requirement.
- I-638 Increased health costs could occur, for example, in cases of BTX contamination. Regulations designed to prevent the occurrence of this or other types of contamination would contribute to decreased health costs beyond the contribution made by industry salaries, insurance, benefits, etc.

I-639 18-20, 2nd para., line 1, DELETE "land". REASON: If this is to be left in the document, show how the oil and gas industry has affected human health because of pollution.

CHAPTER XIX. UNAVOIDABLE ADVERSE IMPACTS

I-640 19-1, 2nd para., COMMENT on this paragraph: All activities do not occur at the same time and in the same place which, in and of itself, minimizes impact.

I-641 19-1, A, line 4, CHANGE "expected" to "possible".

I-642 19-1, A, line 11, DELETE "visual".

I-643 19-1, A, line 15, ADD "temporary", so that the line reads, "...or temporary distribution of...".

I-644 19-2, lines 5 and 5, DELETE these lines. REASON: One could say the same of a car.

I-645 19-2, line 7, CLARIFY this statement.

I-646 19-2, B, line 3, DELETE "visual disturbance".

I-647 19-3, D, line 5, DELETE "visual disturbance".

CHAPTER XX. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

I-648 GENERAL COMMENT on this section: Over the course of the time that oil and gas production has occurred in New York State, there has been no irreversible or irretrievable commitment of resources, beyond the irretrievable loss associated with the development of the minerals.

I-649 20-1, line 2, DELETE "human".

I-650 20-1, A, line 1, COMMENT: The production of oil and gas is the very purpose of the industry. The value of these resources is not realized until they are developed and brought to the surface.

CHAPTER XXI. ALTERNATIVE ACTIONS

I-651 21-1, 1st para., line 8, DELETE "versus", ADD "Alternative D - Revision of Existing Regulations".

I-652 21-3, B, 1st para., line 7, CHANGE "spewed" to "leaked".

I-639 Although air and water contamination have been responsible for most documented cases of oil and gas related health problems, human health could certainly be affected by large oil or brine spills in agricultural areas.

I-640 Comment noted. However, when the activities are repeated and concentrated in certain areas of the State, the potential for impact increases.

I-641 The sentence is correct as written.

I-642 The sentence is correct as written. See Topical Response Number 2 on Visual Resources and Assessment Requirement.

I-643 The suggested change does not appreciably alter the intent of the sentence. Changes in plant and animal distribution may or may not be temporary.

I-644 This draft GEIS applies to the oil, gas, and solution mining industries. Environmental impacts of automobiles are irrelevant.

I-645 This sentence includes a number of possible minor impacts that may or may not occur. In addition to produced hydrocarbons and brines, there could be spills of rig fuel, mud or cement additives, and other chemicals or lubricants used at the drill site.

I-646 See Topical Response Number 2 on Visual Resources and Assessment Requirement.

I-647 See Topical Response Number 2 on Visual Resources and Assessment Requirement.

I-648 This section describes all possible irretrievable losses or irreversible commitments of resources associated with oil, gas, and solution mining activities. This includes losses or commitments of resources above and beyond simply the loss of the produced hydrocarbons themselves.

I-649 The sentence is correct as written. See response to I-648.

I-650 Nevertheless, once these resources are produced, they are irreplaceable.

I-651 The suggested change does not appreciably alter the intent of the text, which is to describe the range of available alternatives.

I-652 Change "spewed" to "leaked".

- I-653 21-5, 1st para., DELETE this paragraph, ADD sentence to the beginning of the 2nd paragraph to read, "Regulation is the cooperative effort of government and industry to operate in an effective, efficient and conscientious manner that avoids harmful consequences." REASON: This paragraph is purposely antagonistic and negative. In every field, there are those who do not operate conscientiously, and who intentionally violate laws and regulations. This includes government agencies. Indeed, there are those who believe that management of resources can no longer be entrusted to government. The oil and gas industry is in no way suggesting that our environment be entrusted to unregulated industries. In fact, we are suggesting that some unregulated situations be regulated, i.e., water well drillers.
- I-654 21-5, C, ADD "D. REVISION OF EXISTING REGULATIONS" and divide appropriately into two sections.
- I-655 21-5, C, line 2, CHANGE "1972" to "1984".
- I-656 21-5, C, 1st para., last line, ADD phrase at the end of the last sentence to read, "...because the Generic Environmental Impact Statement was not in place."
- I-657 21-6, 1st full para., line 7, DELETE the sentence beginning on this line. REASON: The industry as a whole never presumed it could sacrifice long-term environmental protection for short-term gain.
- I-658 21-7, 2nd para., line 6, CHANGE "extensive" to "minor".

- I-653 The paragraph is included for public information. While it is true that irresponsible parties operate in many industries, this draft GEIS pertains only to oil, gas, and solution mining. As previously stated, we agree that there should be more regulation of water well drillers.
- I-654 See response to I-651.
- I-655 Add the word "extensively" before the word "updated" to make this sentence technically correct. As stated in the response to I-64, some provisions of the regulations have been updated since 1972.
- I-656 The suggested addition is inappropriate because permit conditions might be necessary in some instances to assure a negative declaration even after the GEIS is in place. See Topical Response Number 3 on EAF and Site-Specific Permit Conditions.
- I-657 The suggested deletion is unnecessary. The DEC has never accused the entire industry of making such a presumption. We are merely describing the cyclic nature of the industry for the public, and stating that long-term environmental protection is always necessary regardless of the current economic state of the industry.
- I-658 This sentence states the conclusion of the GEIS, which details recommendations for extensive revisions and the reasons these revisions are necessary. As previously stated, reasonable alternatives to any proposed revisions or additions to the regulations will be considered during the rulemaking process. At that time there will again be ample opportunity for industry input at public hearings.



GLOSSARY

CR-61

GLOSSARY

IOGA proposes that the following definitions be changed as indicated:

- I-659 BCF: billion cubic feet of natural gas.
- I-660 Blowout: uncontrolled flow of gas, oil or water from a well.
- I-661 Drilling Fluid: mud, water, foam or air pumped down...
- I-662 Infill Drilling: to move the minimum spacing unit inside an existing area. (NOTE: This definition should be placed between "Insert Gas" and "Intermediate Casing or String")
- I-663 Kill Fluid: a heavy fluid which exerts a hydrostatic pressure equal to the bottom hole pressure.
- I-664 Macaroni String: DELETE term - not commonly used in New York.
- I-665 MCF: thousand cubic feet of natural gas.
- I-666 MMCF: million cubic feet of natural gas.
- I-667 NGPA: Natural Gas Policy Act of 1978.
- I-668 Native Gas: ADD phrase to read, "Term is usually associated with gas storage."
- I-669 Nonwetting Phase: the pore space fluid which is not attached to the reservoir rock.
- I-670 Plat: a drafted map of the site location.
- I-671 Potable: consumable by humans.
- I-672 Production Casing: casing through which the well produces.
- I-673 Real Property: includes mineral claims, surface and water rights.
- I-674 Reservoir Rock: (CHANGE definition 2 to read) "Reservoir means any underground reservoir, stratigraphic or structural trap..."
- I-675 Sequestering Agent: chemical additives that reduce chemical reaction.
- I-676 Show: (NOTE: should be moved between "Short Ton" and "Shut In") small quantity of fluid.
- I-677 Spudding: breaking of the surface in the initial stage of drilling a well.
- I-678 Squeeze: pressure cementing technique.
- I-679 Step Out: to move the minimum spacing unit outside an existing area.
- I-659 It is commonly understood that "BCF" usually refers to a volume of natural gas.
- I-660 The current regulations (6NYCRR Part 550.3(c)) do not include "water" in the definition of a blowout, but water is likely to be present. Therefore, the suggested change is more technically correct.
- I-661 Anything derived from mud, water, gas, or air, along with common additives, is included in this definition.
- I-662 The suggested addition is appropriate, but "Infill Drilling" would be more clearly defined as "Drilling between known producing wells to better exploit the reservoir."
- I-663 The suggested change is more correct, but the purpose of kill fluid as stated in the GEIS definition is also correct.
- I-664 This definition is included in the glossary because this descriptive field term was used in the GEIS for illustrative purposes.
- I-665 It is commonly understood that "MCF" usually refers to a volume of natural gas.
- I-666 It is commonly understood that "MMCF" usually refers to "million cubic feet of natural gas."
- I-667 Correction noted. Add the words "of 1978" after the word "Act".
- I-668 Clarification noted. The suggested phrase should be added.
- I-669 The definition given in the GEIS is more technically correct, but addition of the suggested definition adds clarity.
- I-670 The suggested definition alone is too restrictive, but its' addition to the existing text adds clarity.
- I-671 The definition should be changed to read, "suitable for drinking by humans."
- I-672 Change the text as follows: "Casing set above or through the producing zone through which the well produces."
- I-673 Correction noted. Add the word "surface" after the word "claims".
- I-674 The definition in the text was taken directly from the Oil, Gas and Solution Mining Law.
- I-675 Correction noted. Change "reaction" to "reactions" and delete the phrase "between injected fluids and formation fluids."
- I-676 Correction noted.
- I-677 Correction noted. The definition should read "The breaking of the earth's surface in the initial stage of drilling a well."
- I-678 It would be more correct to add the words "under pressure" after the word "forced". Add the phrase "... between two strings of pipe, or into the casing-hole annulus" at the end of the definition.
- I-679 Correction noted. As suggested in comment I-662, "infill drilling" should be added to the glossary as a separate entry.

- I-680 | Stimulation: act of increasing production by artificial means.
- I-681 | Strippers: a well producing less than 10 barrels of oil per day
or 60 thousand cubic feet of gas per day.
- I-682 | NOTE: Please add term "Exploratory Well" and define as follows:
a well drilled outside a proven area or horizon.

- I-680 | The definition given in the GEIS is technically correct, but it would be
more descriptive to define "stimulation" as "the act of increasing a well's
productivity by artificial means such as hydraulic fracturing, acidizing,
shooting, etc."
- I-681 | Correction noted. Delete the word "oil" the first time it occurs and add "or
60 thousand cubic feet of gas per day".
- I-682 | Inclusion of this term in the glossary is appropriate.